

AMATEUR RADIO

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JOURNAL OF THE WIRELESS
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VK3 was the first VJA Division to operate the special commemorative call, VK7SA which opened on SSB at 0001 UTC on 15 March from the station of Barry VK3XV and worked continuously for 48 hours. Operation was on 40 and 20 metres with some contacts on 2m FM and SSB. Propagation was very poor on the higher frequencies and 40m proved to be the most reliable. A total of 503 DX stations were worked covering 41 countries. The station was operated by Fred Mackiewicz VK3ZZN, John Ambler VK3DUE, and Barry Wilton VK3XV. Equipment line up included an IC-751 driving a pair of 3 500 Zs in a home brew linear, an FT101Z driving a FL2100 Z linear, and an IC-271H.

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Ever read Eric's VHF/UHF column and wondered exactly what 'aircraft enhancement', which he refers to frequently, means? Doug VK3UM, one of the pioneers of this mode in Australia, has written an exclusive article for AR, p4, explaining how aeroplanes function in enhancing signals on 144 and 432 MHz, the experiments he and others have conducted on this medium and how others may join in 'to give it a try'.

There is another 'Amateur in Space' launch due around the middle of this month and the WIA wrote to enquire if the amateur, Tony England, would be able to send greetings to the WIA for the 75th Anniversary whilst passing over Australia. Turn to p5 for David K1ZZ's reply.

Interesting comparison! Branda VK3KT, Federal Education Co-ordinator, features a trial AOCPT exam paper in her column this time and on page 53 there is a Pre-World Wide I exam paper courtesy of Fred VK4RF. This exam was a written paper with a time allowed of two hours, in which the candidate had to draw diagrams, write answers and also do a little calculating whereas the exams of today, the candidate has to know the answers and tick the appropriate box.

The rules for the 1985 Remembrance Day Contest are printed in this magazine and contestants are requested to peruse the rules thoroughly prior to the contest. There are a few alterations to the rules, but Ian VK5XK has explained them fully in his lead-up to the rules and has also included diagrams of how the log sheets should be laid out. Also announced in the contest columns is the winner of the Contest Champion for 1985 and the results of the John Moyle Memorial Field Day Contest.

International News, p18, features a special story of how the IARU came into being as it celebrates its 60th Anniversary.

Next month's magazine will feature a review of the Icom IC-735 All Mode HF Transceiver and an informative article of the history of VK3 bridging the communications gap with the eastern states and overseas on VHF and UHF. Also there will be details of a lecture given by Dr Karl Meinzer DL4ZC in Melbourne on 28th May. Karl visited Sydney, Adelaide and Melbourne en route to the annual amateur convention in Christchurch. He is one of the best-known members of the German AMSAT DL, which was largely responsible for our present operational satellite, OSCAR 10.

DEADLINE

All copy for September 1985 AR (including regular copy of Hamads and columns) must arrive at PO Box 300, Caulfield South, Vic 3162 at the latest by midday 22nd July 1985.

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Material should be sent direct to PO Box 300, Caulfield South, Vic 3162, by the 25th of the second month preceding publication. Note: Some months are a few days earlier due to the way the days fall. Phone: (03) 528 5962.

Hamads should be sent direct to name address.

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MORE HISTORY

EDITOR'S COMMENT

As part of the WIA 75th Anniversary activities, the Publications Committee has, for some months, been searching through old issues of AR to extract items of historical interest. Ultimately this collection will be the framework supporting a full and detailed history of the WIA. We simply do not have enough people with enough spare hours to produce such an ambitious work before the end of 1985. Perhaps our centenary in 2010 could be the target for which our historians should aim.

In the meantime we hope to publish a number of historical reviews during the latter part of this year, each probably limited to just one particular aspect of amateur radio. Thoughts which occur to us are the evolution of VHF, or the techniques and development of SSB, or the growth of amateur television. Amateur radio has such a rich range of individual fields of activity that many full-scale books would be needed to do justice to all.

One such area, of obvious interest to the people who produce it, is the evolution of this magazine. On its own this could be the subject of a book; but let us look at one small aspect, the way in which costs have changed since the first post-war printed issue in October 1945. (The history of AR from its first issue, October 1933, until the war reduced it to a duplicated newsletter, is yet another story.)

The October 1945 issue was of 20 pages and had a cover price of 6 pence (or 5 cents in post-1966 decimals). This, from a value for money angle, is $\frac{1}{4}$ cent per page. *Some cheap enough, doesn't it?* In 1949 the price rose to 9 pence, still for 20 pages, although odd issues were of 24 and very rarely as many as 28 pages. So we might say it was still about the same cost per page until 1953, when inflation really hit and the price went to one shilling (10c) for only 16 pages (in January 1953).

How does this compare with today? We do not show a cover price these days, for several good reasons, but each member pays from his/her annual subscription to the Institute about \$1 per monthly copy. Each issue now has 64 pages, so the cost per page is less than 2c, about a seven-fold increase over 1945, but only $2\frac{1}{2}$ times as much as that January 1953 issue! And we now have full-colour covers and vastly more information between them!

In 1950 the price of petrol was 3 shillings a gallon (about 7c/litre). It is now nearing 60c/litre in the capital cities. Even as late as 1958 a Melbourne morning paper cost fourpence (3.3 cents) but is now 30 cents. "Amateur Radio" is now even better value than ever. *Can you afford not to belong to the WIA?*

Bill Rice VK3ABP
Editor

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Our first tests were very encouraging and although contacts were made the signal levels and reliability was just not as predicted. This however was more due to "what we thought we had" than what we actually were achieving in system performance. Finally when we both got our acts together, presto, signal levels were as predicted!

During our initial tests, we quickly realised that peaks of 30dB or more were evident for periods varying from a few minutes to tens of minutes. It was during one of these "good condition" periods (2130 UTC, 1st May 1983, to be exact) that Ralph VK1RK broke on the frequency and almost took the cone out of my speaker! Expecting signals to Ralph to last, Gordon and I continued chatting but when we turned it over to Ralph — Zlch! No Ralph! About ten minutes later during another peak in signals to Gordon, Ralph again broke with S9+ signals. This time we did not leave him out on a limb and quickly exchanged reports etc. Without warning signals, which were steady with little or no QSB, started to drop rapidly and Ralph disappeared from the scene leaving Gordon and I communicating via forward scatter with signals about 3dB above the noise!

What caused this strange propagation? The times of the opening seemed to bear a relationship to an aircraft passing between us. A check the next morning positively established that two domestic services from Sydney to Melbourne were mid path at the very times of the enhanced propagation. Actually on hindsight (always a 20/20 vision), Gordon and I had observed this effect on many occasions but the "penny" only dropped when VK1RK appeared on the scene.

The rest of the story is history, but from our hundreds of "schedules" over the last eighteen months our observations may interest others who, under their own unique circumstances, may care to observe and utilise this novel form of communication medium.

It is most interesting to consider the path profile and relate the enhancement aspect that aircraft have on the Melbourne-Canberra path. Firstly the mountainous terrain between the two cities prevents direct communication except at rare times of exceptional tropospheric enhancement.

I have worked Canberra on 2 metres via Sporadic E back-scatter but, between normally equipped stations, ground wave propagation is most restricted by the mountains around Canberra. Knife edge bending is predominant on similar paths, however the angle presented at the Canberra end is most acute and to hear signal levels of those encountered and without any appreciable QSB, was somewhat of a surprise.

I have deliberately coined and used the word "enhancement" as aircraft reflection (off the body of the plane) is seemingly not the actual propagation or reflecting medium. Checking the surface area of the aircraft and noting the exposed area to the signal, the height and distance of the aircraft, combined with what would be the reflected signal level, did not tally with the signal levels received. They were simply too strong. Moreover it has been found that they can vary most markedly given certain weather conditions.

Well, what causes the effect? The aircraft are believed to be the cause and not the actual media of the enhanced propagation.

Candidly I am not sure of the mechanism but offer some possibilities that seem to relate to our observations.

Under the worst circumstances enhancement of minimal proportions are present on all transient aircraft and although the signal level increase is small it is always present. This effect will only be noticeable by those stations employing high power, high gain arrays and

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About two years ago, Gordon VK2ZAB and I commenced forward scatter tests on 144 MHz between Melbourne and Sydney. The path loss indicated a system gain to overcome -245dB was required. This was achievable with our combined stations. The VK2ZAB station consists of four bays of 9 element Yagis (18.5dBd), 400 watts output and a receiver sensitivity of better than 270 degrees K. The VK3UM station consisted of a slightly higher antenna gain (19.5dBd) and the same transmitter and receiver performance. Combining each station's performance with that of the encumbrant path loss, signals should be received at each end of the circuit approaching 3dB above the noise for better than 90 percent of the time. It was this figure that Gordon and I set out to prove. Probably the time and effort required to verify the text books would normally not be warranted. However as we were both "into the two metre scene" such an effort seemed worthy of the time. Besides the Sydney-Melbourne path had never been worked before on two metres!

state-of-art (SOA) receiving systems for the signal increase may only be 3-6dB above the scatter path (Melbourne-Sydney). This effect can be related directly to reflections off the body of the aircraft itself and computes closely with the calculated figures.

2. Reflection caused by the condensation trails (con trails) left by aircraft flying above 30,000 feet.

3. Refraction caused by the air turbulence wake left by such aircraft. (Temperature heating effect or vortex turbulence.)

It is notable that although 2 and 3 are offered as explanations, normal aircraft radar returns indicate (other than the aircraft's reflection) the presence of this reflecting medium is seemingly not evident. This could be explained by the fact that such returns would comprise a back scattered signal or possibly insufficient attention has been given to this aspect. Another explanation could be related to the design of such systems which generally display only moving targets. Nevertheless back scatter does occur and will be related later in this article.

Some readers may wish to ponder the actual cause and pursue this aspect to a conclusion and accordingly there are many additional effects which may assist in the derivation of a more scientific answer.

Ignoring point 1, which would be of interest only to high powered or advanced stations, and complies with predictable data, the latter two (or more?) of extended communication range provide the most exciting possibility to stations of more moderate proportions. Signal levels can be very high indeed (over S9 on the Melbourne-Canberra path) and provide reliable and predictable contacts between the two cities. Predicting such enhancement can be as simple as obtaining domestic air time-tables, however as regular air travellers will know, they sometimes only provide a guide! Fortunately there are simpler and more accurate ways.

Aircraft en route report to ground stations remote linked back to the cities via UHF/SHF bearers. Simple sums will show a line of sight path exists from an aircraft midpath between Sydney and Melbourne back to both cities. Naturally you will not hear the ground station but the aircraft provide saturation signal levels.

It is customary for all flights to report their position at designated intervals and in particular the Sydney to Melbourne aircraft use 128.4 MHz, when overflying Canberra. From this report you can ascertain from the call signs and some knowledge of air carrier information, the type of aircraft and more importantly derive just when the enhancement will commence. Experience, plus a little knowledge of aircraft and airspace dictates that enhancement will commence about 10 minutes from that time on the Melbourne-Sydney path and 12 minutes later on the Melbourne-Canberra path. These figures relate to my location in Chirnside Park (35km east of Melbourne), VK2ZAB (10 minutes) and VK1BG (12 minutes). Significantly all aircraft do not precisely report their position at this point and variations can and do occur. It can be assumed that Air Traffic Control have all aircraft en-route visually on radar and it does not matter too much!?? However we can tell!

Another method is by observing what is proving to be a most excellent beacon and a prime example of the application of such a device. VK1RCC is located at Mount Majura, near Canberra and transmits FSK CW on 144.490 MHz at about 12-14 watts output to an omnidirectional horizontal polarised antenna. Not much power you may say, but it can be heard in Melbourne during each aircraft enhancement period. Take a listen to Melbourne stations and you will most likely become fascinated by the effect. Signals will appear from nothing, peak rapidly, hold steady, and disappear into the noise about seven minutes later. Signal levels can be anything from just above the noise floor to S9 on

occasions, but are always present.

Application of this beacon is most useful as it provides an indication that propagation exists (or is just about to become available) to Canberra stations depending upon their location. It does however herald the passing of propagation enhancement to Sydney.

The next interesting facet of this enhancement mode relates to the times signals are received at locations that may only be a few miles apart. Although thought to be strange at first, again one should then relate your own and the other station's location, with that of the aircraft. Naturally times will vary and because of the no signal to signal present aspect it will seemingly appear more dramatic. As an example, stations located in the Melbourne suburb of Frankston hear Sydney some two minutes prior to myself. However because of the flight path signals are present for a longer period at my location. Again one should consider the respective incident angles involved. With respect to the Melbourne-Canberra path Eddy VK1VP appears about one to one and a half minutes earlier than VK1BG at my location. It is of interest to note that Eddy's signal from his SOA station never reaches the signal level of Ian's. This is explained by Eddy's location which at the time of best enhancement (critical angle) is blocked by Black Mountain. (8.5 degrees elevation equals -85dB additional loss on a horizon signal.)

Stations throughout Canberra "come and go" at predictable times commensurate with the angles involved. Thus this aspect may prove a little difficult to initially define for your particular location. However given you know each other's location and the flight path of the aircraft or can hear someone from the distant end, you can from this pretty closely predict when signals will be present at either station. At first you may feel respondent upon hearing a station in your city giving the distant station S9 when you are hearing zich. Don't give up; assuming your system to be performing well you have either just missed or are about to hear the other guy! If you don't hear them well you have problem(s) to solve.

Back to the signal characteristics. As mentioned earlier I was initially surprised at the level and lack of QSB of Ralph's VK1RK signal. Where was the characteristic aircraft flutter? Again the penny dropped! The normal aircraft flutter is caused by the multipath effects of signals between the aircraft, ground, and other relevant reflecting objects. In this case the path is direct, and the received angle on the horizon. Consequently no multipath would be present. That explained that one!

It was not long before it became most apparent that the signal levels were not always strong. In fact levels vary up to 60dB under certain conditions. Why? It was this fact that (with continued observations) derived the possible explanations given in 2 and 3.

Ian VK1BG has been a most regular contributor and back-bone to our experiments. His unique location in Canberra provides midpath observations and co-ordination with Sydney. Moreover we can always liaise on 80 or 40 metres. Ian, giving favourable weather conditions, can usually observe the aircraft first hand. The viewing of condensation trails provides a possible explanation to our varying signal levels. As a sideline to the saga, if he can actually see the aircraft we can predict to within 10 seconds when enhancement will commence. This you can see is most beneficial on the Melbourne-Sydney path where signals are less strong. Thus given this knowledge you are ready and prepared to go prior to the onset of enhancement.

Ground surface weather conditions naturally play little or no part on the received signal

levels. It is what is going on above 30,000 feet that is determining the enhancement. Simply put, it is believed that, given stable conditions "upstairs" (viz winds are minimal and temperatures consistent) signals are higher and remain present for longer periods. Unstable conditions and jet stream effects diminish both these parameters. A simple check of the weather map gives some guidance to what may be expected. Close isobar lines between the cities in question invariably relate to lower enhanced conditions (time and level). It has been found that winter seems to provide better enhancement (on average) than summer, and evenings better than day and mornings. This is a subjective assumption related only to our operations over the past few years which may have to be qualified through a more scientific approach. It does however support the theories although it is a somewhat "chicken and egg" situation. The baseline is however from a practical sense the period of enhancement (for 144 MHz) can vary (for a single aircraft) from 2-7 minutes and is present for better than 95 percent of each aircraft pass.

I mentioned "for a single aircraft" in the previous paragraph and on this aspect we find additional benefits from our "bunched domestic time table" which, although most inconvenient to most travellers is helpful to us amateurs. As you are aware our domestic airlines on the Sydney-Melbourne route run almost parallel services. In practice this provides two flights separated by about 8-15 minutes. This aspect does provide on many occasions continuous enhancement spanning 15 minutes or so. Throw in an International flight or two in a similar time bracket and you can see we have a propagation medium of practical proportions. Thus aircraft enhancement is not quite the "flash" propagation you may first believe.

The extra flights have a side effect. Now we get QSB. This results from multipath effects between the aircraft and body of the aircraft in transit. It varies from extremely rapid (making copy difficult) to extremely slow, and seemingly occurs when one aircraft is leaving the mid path area utilised for the enhancement path. It also relates to the speed and direction of the aircraft involved.

The flight path of the aircraft is of prime importance. Coincidentally, my location favours the Sydney-Melbourne route where I have a small incident angle. This is not a limitation to others off route. It has been proven that stations from Geelong to Frankston to Lilydale are all able to use this propagation medium. How far either side of the aircraft track this is possible (given the height of the aircraft and station separation) has, as yet, not been accurately defined. Activity has not been great but hopefully others reading this article may become sufficiently interested to participate. What is known however, is that David VK3AAU in Drouin South, has worked Gordon VK2ZAB in Sydney. The enhanced period is short, but present at about 80 kms from the aircraft track.

What aircraft routes are useful? Well that's dependent upon the respective locations. In the Melbourne-Canberra-Sydney path, only south bound (out of Sydney) flights are practical. North bound flights (out of Melbourne) fly too far west to provide us with the direct mid path enhancement. Canberra flights are of course too low at the point enhancement.

The Sydney-Melbourne flights fly at altitudes of 31, 33, 35 thousand feet and in addition to height separation may be separated laterally. It is the most easterly path which suits us more. This has become more evident from our 432 MHz experiments to be discussed later in this article.

Obviously many factors come into play but armed with an aircraft route map, time table or

VHF aircraft receiver, a hand calculator combined with a couple of suitably equipped stations you could really make a mess of the Ross Hull Contest!

Aircraft size and type have a bearing on the received signal levels. From our observations and by use of the information given when the aircraft report their positions, we have been able to know just what we are "working off"! Naturally as would be expected the 747s and DC10s provide a higher level of enhancement. 737-727 and aircraft of this type also provide excellent enhancement. What is somewhat interesting is that the smaller aircraft F28s etc (if flying high enough) provide similar levels. Don't get tricked on the smaller aircraft, they fly slower and naturally your predicted times will be different. Thus pure or turbo prop aircraft provide similar degrees of enhancement.

In November 1984 I dismantled my 144 MHz EME array and decided to put all my effort into 432 MHz. If you read Eric's VHF/JHF notes in this magazine you will be aware of results. Currently I run 16 bays of 16 element ATN arrays providing a just over 26dB of antenna gain. Under terrestrial working I run 375 watts output (SSB) and the receiving system approaches 45 degrees K. With this background information the aircraft enhancement effects on this band will now be discussed.

Firstly, yes it does exist! Moreover it seems that the peak signal levels may be greater than 144 MHz, although insufficient data to confirm or deny this aspect is, as yet, to be determined.

Currently Gordon VK2ZAB is only running 10 watts to four Yagis and without a low noise pre-amplifier. Nevertheless we have had many two-way contacts. (The first Melbourne-Sydney 432 MHz.) Signals from me have peaked over S9 and Gordon himself has reached S9.

What we do find difficult between the two bands is the period available for communication and the signal differences between relative sites. In the first case it appears that only one half to two thirds of the enhancement period exists on 432 MHz. Secondly, the transit time of signals appearing (cross town in Canberra) is quite dramatic. Signals can be S9 at one location and inaudible a few miles distant.

I hasten to add that it is early days yet and when stations participating in our experiments improve their systems commensurate to 144 MHz, more definitive conclusions may be resolved.

Naturally as I employ a EME station capability of not too modest standards, allowances must be made in this regard. Advantages of lower sky noise and a greater receiver sensitivity offset actually surpass that of 2 metres, but to discuss this and associated aspects is beyond the intent of this article. In theory my scatter signal in Sydney should surpass (by almost 6dB), that of my previous 2 metre signal, however currently the Sydney guys have as yet to reach this point. (Gordon VK2ZAB is working on it!) Canberra stations, and in particular Ian VK1BG can copy me on scatter (CW) for greater than 90 percent of the time as evidenced from retransmissions on 80 metres. It is most useful for Ian to be able to copy (on SSB via forward scatter) for 75 percent of the time to be able to wait until signals peak (from enhancement) to S3, before responding.

I strongly believe that aircraft enhancement will support 1296 MHz and wonder just who will be the first to bridge the gap between Sydney and Melbourne on that band. Melbourne-Canberra should be a breeze!

To summarise, what can be expected? Firstly on two metres equipment wise. A well equipped station would, I consider, consist of say a single ATN 13LB type antenna (13.5dBd) fed with half inch helix or Belden 9913 and 100 transmitter watts output power. Receiver

wise a preamplifier (preferably masthead mounted) with better than 1 dB NF (BF981 or better). Such a station, if located in Melbourne, will work a similar equipped station in Sydney and expect to hear on average signals between S2-S5. On occasions short periods of up to S9 will be achieved.

On the Melbourne-Canberra path signals will "blow your head off" at times and on average be better than S7. Accordingly you may relate this to lower powers and antenna gain. It is quite easy to work this path (Canberra) with 10 watts and a modest antenna.

Don't worry about elevating the array! Signal received angles are right on the horizon due to distances involved, and secondly beam in the direct straight line path.

Some other interesting effects that have come to our notice during our scheds has been the incidence of backscatter signals off the reflection medium. When enhancement is very strong Ian VK1BG receives backscattered signals from Gordon VK2ZAB. Normally Gordon is inaudible when beaming towards me (at VK1BGs QTH) and only on the very strongest of such enhancement (towards me) are signals of this nature heard. Conversely, Gordon can hear VK1BUC, when he is beaming my way.

Multi-propagation modes in association with aircraft enhancement have been noted. Gordon VK2ZAB runs schedules northwards from Sydney on weekends. Many VK4s in Brisbane and Bill VK4LC (Mt Tamborine) are worked. I try to monitor such schedules and relate the meteor "ping" rate from week to week. Generally speaking the VK4s always provide from 5-15 (less than 1 second) pings for each 5 minute period. When meteor showers are present this increases dramatically with some classic pings exceeding 15 seconds. It has come to my notice that on several occasions I have heard Bill VK4LC with a steady signal for periods of up to one and a half minutes. Not sporadic E nor a "beaut" meteor ping! My only explanation would be that of aircraft enhancement plus tropospheric

enhancement. (The distance far exceeds that for an aircraft flying at normal heights)! or maybe we have discovered a very high flying aircraft???!!!!)

Finally to conclude, mention must be made of operating techniques. This is not the medium to ragchew although those suitably equipped can make a fair fist of it! Thus, it requires short, precise overers if you want to succeed and more importantly for others waiting to participate. Nothing worse than someone hogging the channel and talking through an enhancement period. Treat your operating like working the RD contest. Generally speaking if you are new at the procedure, listen for a couple of weekends and chat afterwards with those involved. Note the times you hear and whom you hear. This can be related to others and especially to your own capability. For example: a Melbourne station hearing Gordon VK2ZAB on two metres and getting him at S2 should realise he is running 400 watts and it is most likely that your 50 watts would not be heard. (This may not be quite true as most "big mouths" have associated "excellent ears" and may make up for your deficiency.) Moreover nothing is worse than stations at both ends of the circuit chatting on the scheduled frequency complaining nothing is happening.

Many has been the time when I have listened to Sydney stations on 432 MHz chatting during the scheduled period, and Gordon reports the same of Melbourne stations on 144 MHz. What is required are very short transmitting sequences and unnecessary chatter. This aspect would be beneficial on the SSB calling frequency of 144.1 and 432.1 MHz!! For this reason Gordon and I chose 144.2 and 432.2 MHz. At one stage we were forced to work split to avoid the smart "Alecs" but this is the last thing we all would wish.

Currently these are the operating times and frequencies:
144.200 MHz: Gordon VK2ZAB "co-ordinates" the Sydney and beaming Melbourne from 0803-0900 EST (2230-2300 UTC) each

Saturday and Sunday morning. He calls for the first 30 seconds of each minute and listens the last 30 seconds when things are quiet.

432.200 MHz: I (VK3UM) "co-ordinate" the Melbourne and beaming Sydney during the same period above. I call and listen alternatively each 10 seconds and monitor 3.690 MHz prior, during and after the scheduled period. If 80 metres is poor, we utilise 7.293 MHz.

Just why did we pick this particular time? Well it was convenient but we know that current flights provide at least two domestic services and generally an international flight during this period. Fog at either airport and resultant closures can cause consternation at times!

I emphasise everybody is most welcome to join and would respectfully suggest if the group gets too large (as often it does) to pair off to another frequency.

There you have it: "aircraft enhancement" as we have coined the phrase and given this article will inspire others to give it a try and for those scientists out there to come up with a concrete explanation of the "mechanics".

Special acknowledgements include Ian VK1BG, Ralph VK1RK, Eddy VK1VP, Les VK1BUC, Col VK1AU, Glen VK1GL, Peter VK1ZDS, Gordon VK2ZAB, Brian VK2OP, Ron VK2DVZ, Dick VK2BOR, Trevor VK3REG, Les VK3ZBL, Lionel VK3NM and David VK3AUJ. Apologies to any that have been inadvertently missed.

JUNE'S BEST PHOTOGRAPH



The judges at Agfa-Gevaert selected the photographs on page 21 of the June magazine. Next month the winner of the Agfa prize will be announced.

WJ&S
75th Anniversary News



LETTER TO WIA SECRETARY
RE SPACE SHUTTLE FROM
DAVID SUMNER K1ZZ OF ARRL

Tony England will be carrying two-metre FM and slowscan TV equipment with him on the S1-F mission that is now slated for mid-July. Unfortunately, he will be limited to using the in-the-window antenna that was used by Owen Garriott, rather than an external antenna in the cargo bay. Also, his operating time will be extremely limited owing to other commitments.

We are passing along your request for a message of greetings to be sent from the Shuttle. The biggest problem is likely to be that Tony will not know, more than one orbit in advance, when he will be able to operate.

At this point I guess the best we can do is to suggest that WIA members equip themselves to receive FM (and preferably SSVT) on 145.53 MHz, and hope that things will fall into place for the mission.

It must be emphasised to members the difficulties with this type of operation — Good Listening.



TRY THIS

POWER SUPPLY AMMETER

Arthur Sibley,

RMB 24, Cooper Road, Wamborn, NSW, 2620

I had much trouble looking for an ammeter for high current power supplies. This is what I settled on and it works quite well for general measurements.

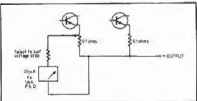


Figure 1: Circuit for the Ammeter. Note that only 2 transistors are shown but any number may be used.

Effectively the arrangement is a voltmeter reading a voltage drop across the transistor equalising resistor of any one of the parallel voltage regulating transistors, any type or make.

I used 2N3055s and have six in parallel. The resistor is 0.1ohms and at 6amps the voltmeter has to measure full scale at 6V.

This corresponds to 30,000 ohms for a 20uA

meter. As the internal resistance of the meter is 5,000 ohms, a 25,000 ohm resistor will give full scale for 6x6 = 36A.

I selected my resistor so the scale could have 40A full scale. The meter originally came from a tape recorder level meter — nothing sophisticated, but very useful.

VHF COMMUNICATIONS MAGAZINE

Subscribers please note!!

Following the notice in *Amateur Radio* there have been some delays in the 1985 edition due to the lack of a translator.

Please be patient and any further developments will be published in AR.

ERRATUM

The April issue of AR carried a book review of the Confidential Frequency List which stated that the book could be obtained from AR advertisers such as GFS. This was incorrect. The book is available from AR advertiser Dick Smith (Catalogue No B-9602, cost \$15.95), or as per Spotlight on SWLing for February 1985, page 37.

Apologies are offered for any inconvenience caused.



WIA Seventy Fifth Anniversary

JULY 1985

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 Dominion Day - Canada	2 Middle of the year	3	4 USA Independence Day	5 Alice Springs Show	6 Venezuela Phone Test
7 Venezuela Phone Test	8 School resumes VKA	9	10	11	12 National Aboriginals Day Tennant Creek Show	Colombian DX Test IARU Radiosport Championship International QRP Test West Coast 180 SSB Test
Colombian DX Test French National Day IARU Radiosport Championship International QRP Test West Coast 180 SSB Test	15	16	17	18	19 Katherine Show	20 1985 Seaxen WW DX Test CQ WW VHF Test Jack Piles Memorial Test Venezuela CW Test
1985 Seaxen WW DX Test Brigitte National Day CQ WW VHF Test Pitt Man on Move - 1989 Jack Piles Memorial Test Venezuela CW Test	22 CQ WW VHF Test School resumes VKB VK1 GM at 7:45pm	23 VK5 GM	24	25	26 Darwin Show	27 Country Hunters Test
28 Country Hunters Test	29 Country Hunters Test	30	31			

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EQUIPMENT REVIEW

Ron Fisher VK3OM

3 Fairview Avenue, Glen Waverley, Vic. 3150

KENWOOD TS-940S ALL MODE HF TRANSCEIVER

The TS-940S is an updated version of the well known and respected TS-930S. The 930 became available around mid-1982 and quickly became a status symbol among amateurs.

However in many respects, the 930 was surpassed by the TS-940 released just a few months later. Perhaps the greatest drawback of the 930 was the inability of the memory system to store mode information. The 940S overcomes this and at the same time introduces many brand new and unique features.

At first glance, you might suspect that the 940 and the 930 are packaged in the same cabinet. There is certainly no doubt from their appearance that they are closely related. But in fact the 940S is both larger and heavier than the 930. Width is up from 374mm to 401mm, other dimensions remain the same, weight is up from 18.5kg to 20kg. Some of this increase in weight is accounted for in the automatic antenna tuner which now covers 160 metres, and in the improved cooling for the final which allows a longer duty cycle for RTTY. The most striking improvement in the 940 is in the tuning, memory and frequency selection areas. On the 930 this was limited to amateur band selection buttons, 1 MHz up/down selection and the eight position memory switching. All of this has been replaced with a multi function keyboard.



Let's look at this in some detail. Ten band/key buttons allow instant selection of each amateur band with two buttons for 10 metres at 28 and 30 MHz. When in the memory mode these same ten buttons select memories one through ten in any one of the selected four memory banks. There are now a total of forty memories.

The four memory banks are selected by a switch through the top hatch. Unfortunately the memories are not tunable. They can be shifted up to ± 9.9 kHz with the RTT, but if a greater range is required, the memorised frequency must be transferred to VFO A or B which you then lose. Memory scanning works well with a 5 second hold on each memory as the scanning proceeds.

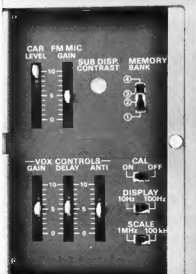
Finally, the same ten buttons can be used as a direct entry keyboard to provide direct access to any required frequency. 1 MHz up/down keys are also available.



Keyboard.



Clock Display.



Controls within the Top Hatch.



Mode Selection Buttons.

Six mode selection buttons to the left of the tuning control replace the old style rotary switch of the 930. As each mode is selected, a small indicator lights and the mode is signalled in Morse code — 'L' for LSB, 'U' for USB, etc. To the right of the VFO knob are five VFO controls and the voice frequency readout selection button. That is another of the new features of the 940. Along with the Morse code identifier this will make operating much easier for sight impaired amateurs. A voice readout is an optional extra. Eight memory controls are arranged above the keyboard,



Frequency Readout.

which allow for memory entry and recall, VFO to memory and memory to VFO transfer as well as memory scan.

Next is the Sub Display, simple name for an LCD display that imparts more information than anything seen before. Let's run through what it displays. A twenty four hour clock, on/off times for unattended switching of the transceiver mains power, frequency in the VFO not being used at the time, ie it displays VFO B if VFO A is in use. It displays, in turn, all the frequencies stored in memory and gives a graphical display of the status of the SSB store tone and also the CW VBT. It indicates when the auto antenna tuner has been selected, when it is tuning, when it has completed tuning, and whether a match is possible or not. Selection of the various display functions is selected by the four buttons under the display except for the antenna tuner display which appears when the auto tuner is activated.



Slope Status.

SSB and CW tuning rate remains the same as the 930 with one knob revolution for 10 kHz shift but on AM and FM this is changed to one knob revolution for 100 kHz shift. I feel that this is too fast and that perhaps a 50 kHz rate might have been better.

It has been reported in some magazine previews (not AR) of the 940S that transmitter power output is 250 watts. However as we shall later see the output is around 100 watts and the INPUT is claimed to be 250 watts.



Antenna Function

Some of the other handy additions to the 940S include switching of the digital display to either 100 or 10 Hz resolution and the analogue slide rule frequency indicator under the digital display to either 1 MHz (where it was on the 930) or to 100 kHz.



Power Output Meter.

The power output meter, which is quite accurately calibrated in watts, now also indicates PEP output on SSB. I found the meter needed a bit more damping when reading PEP but at least this is a start.

Numerous facilities are available on the rear panel, although like the 930, they are a bit hard to get at. The IF output socket is now directly compatible with the SM-220 monitor scope and providing the 220 is fitted with a BS-8 adaptor the band display feature can be used.

On the cosmetic side of things, the 5 meter colour scheme has been changed. It now has a black

background which I rather liked but a 930 owner, who liked the 940, preferred the light coloured meter on his rig.

As 930, the 940 has two cooling fans, one for the power supply and one for the transmitter's final amplifier. The power supply fan tended to operate quite a bit during receive-only operation. The noise produced was quite audible although not all that obtrusive. In fact I noticed more when it had switched off. The final amplifier fan was much quieter and only came on after several minutes of transmission.

The 940 RIT/XT control deserves a mention. The offset required can be preset to any required amount up to ± 9.9 kHz by rotating the continuously variable control. Push the RIT button and there you are. Push the RIT button again and the receiver is back on the original frequency with the offset frequency still preset and available. Pushing the clear button resets the RIT offset to zero.

Rear panel facilities have been increased and now include two accessory sockets for a computer interface and for the connection of data communications.

CIRCUIT DESCRIPTION

The TS-940 is a triple conversion circuit for transmit and also for the FM receive mode. Other receive modes include one extra conversion down to 100 kHz which includes a most effective notch filter.

The conversion set is: first IF at 45.05 MHz, output from the synthesiser at 45.06 to 75.05 MHz which converts the incoming signal to 30 MHz for the first IF. Second IF is 8830 kHz, and it is at this frequency, common to most Kenwood HF equipment, where the main IF shaping filters are located. Third IF is 455 kHz. The transmitter balanced modulator is at this frequency and a separate 455 kHz IF strip comes off at this point for FM reception.

Output from the synthesiser is in 10 Hz steps for SSB and CW and 100 Hz steps for AM and FM operation. Tuning around on AM there were plenty of clicks when tuning across strong signals as the synthesiser changed frequency. In this respect the 940 is very much inferior to the 930. The variable bandwidth controls operate at the second IF frequency and employ two variable carrier oscillators at 8.83 and 8.375 MHz. The noise blanker also operates at this frequency and uses a four diode switch ahead of the main filters.

It is interesting to note that the specified selectivity of the 940S is rated at 2.4 kHz at -6 dB and 3.6 kHz at -60 dB as against 2.7 and 4.0 kHz for the 930S. In a side by side test there was no detection of any difference in the two transceivers.

The RF output from the solid state transmitter output stage is diode switched to allow the full break in CW operation.

TS-940S ON TEST

The following equipment was used to produce the test figures. A Yaesu YR150 terminating watt meter,

Drake R-4 through line watt meter, Kenwood SM 220 monitor scope, AWA F242A noise and distortion meter, Daven terminating audio output meter and Marconi TF995A/5 signal generator.

Frequency Stability

The stability of the 940 is most impressive. It was checked against VNG, WWW and several broadcast stations over long periods and under various ambient temperature conditions. It is really hard to be sure that the 940 drifts at all but if it does, the total would be under 20 Hz. If this type of performance does not satisfy, an optional high stability master oscillator, available which claims a long term stability of ± 1 in 10^{10} is available.

Power output

As mentioned earlier, some previews of the 940 have indicated that the power output has been increased to 250 watts. Not so, but the input is claimed to be 250 watts and the output is around 100 watts.

Power was measured under CW conditions with full drive, referenced to the PEP output as indicated on the monitor scope. For good measure a two tone test was carried out.

Band	CW output	PEP output from scope	Two tone output $\times 2$ to give PEP
1.8 MHz	127 W	130 W	110 W
3.5 MHz	127 W	130 W	110 W
7.0 MHz	127 W	130 W	110 W
10.1 MHz	126 W	130 W	110 W
14.0 MHz	124 W	135 W	105 W
18.0 MHz	124 W	130 W	110 W
21.0 MHz	124 W	130 W	105 W
24.5 MHz	123 W	125 W	105 W
28.5 MHz	123 W	125 W	100 W

While doing these tests, the power output meter calibration on the 940 was checked. With steady carrier, the 940 meter was 10 percent low compared to reference meters. Under PEP conditions it was hard to arrive at an accurate estimate due to the rather fast ballistics of the meter. Perhaps Kenwood might consider the addition of a hold circuit or even a simple increase of the meter decay time.

The scope pattern indicated a very clean output at all times even with large amounts of speech processing in use.

The power control allows the operator to reduce output in all modes to about 5 watts. This can be easily monitored with the power output setting of the 940 meter.

Subjective tests of the transmitted audio quality was carried out in the three available modes. SSB quality was rated as very good with an actual perceived improvement with the processor in use. Many critical amateurs have noted the distinct quality of the TS-930. It's pleasing to report the 940 rate is the same sound. AM quality was smooth and clear particularly with the optional MC-60A microphone in use. But the big surprise was the superb quality of the FM mode. Over a given path, the FM gave much better quality and signal to noise ratio than either AM or SSB. Why don't more amateurs use this mode on the wide open spaces of the 10 metre band?

Receiver Tests

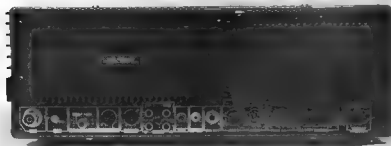
The extension speaker output was connected to the terminating audio power meter and the noise and distortion meter. An 8 ohm load was selected. Residual noise with the audio gain at zero was -55 dBm unweighted and -52 dBm weighted. This is a reasonable figure, better than many transceivers but well down on the best (the FT-102). Audio output power and distortion were:

Output Power	Distortion
5 watts	1.5%
1.5 watts	1.8%
2.0 watts	3.5%
2.5 watts	13%

While these figures are reasonable and representative of modern amateur equipment, I often wonder why a transceiver of this class doesn't have 10 or 15 watts audio output. Surely the cost of producing 10 watts would be very little more than 2 watts but the improvement in recovered audio could be substantial.

Received audio response in LSB was checked by

Rear of the TS-940S.



tuning across the signal produced by the 940 internal crystal calibrator. The results were:

100Hz	200Hz	300Hz	400Hz	1kHz	1.5kHz
10	-2	-5	0	0	-1
2kHz	2.2kHz	2.5kHz	2.7kHz	3.0kHz	
3	-4	-5	-7	26dB	

While this is very smooth, it shows that the carrier is set a little too close to the filter skirt. A slight adjustment would give a better HF response, although as shown above in the transmitter tests, this is not all that bad.

Frequency response was also checked in the AM receipt on mode.

100Hz	200Hz	300Hz	700Hz
-10dB	-4dB	0dB	0dB
1kHz	2kHz	3.5kHz	5kHz
0dB	-3dB	-12dB	-12dB

The fall off is surprising at the low frequency end, however feeding in a good quality speaker the audio was clean and quite acceptable.

The action of the SSB slope tune controls were checked and should be referred to the overall response figures above.

SSB slopes tune, high. Control at centre (12 o'clock) point

1kHz	1.5kHz	2.0kHz
0dB	-10dB	-20dB
Control f1 on (7 o'clock) point	1kHz	1.5kHz
	-13dB	-26dB

SSB slopes tune, low. Control at centre (12 o'clock) point

400Hz	1kHz
-20dB	-20dB
Control f1 on (5 o'clock) point	1kHz
	-20dB

The notch filter was checked at four points through the audio range. It was able to produce a -30dB notch at 1kHz, 2kHz and 2.5kHz and a notch of -25dB at 500Hz. The notch was very sharp and its act on had very little effect on the received audio quality. There was no overall drop of the received audio level as often happens with these devices. The notch filter can be used with equal effectiveness on all received modes.

The CW VBT (variable bandwidth tune) operation was verified. No optional CW filter was fitted to the review transceiver and from the results obtained only the most dedicated CW operator would probably require one. Two are offered as options.

With the VBT at normal the band width was 2kHz in the -20dB points, but with it at narrow was reduced to 800Hz at -20dB points with an overall drop of 10dB in the actual audio output.

Receiver signal to noise ratio was next measured. This was checked at two frequencies.

At 14.2 MHz LSB	1 uV 20dB	2 uV 10dB	1 uV 5dB
At 28.2 MHz LSB	1 uV 22dB	2 uV 5dB	1 uV 2dB

FM quieting was measured at 14.2 MHz and turned in a remarkable 7dB. AGC action was also checked at 14.2 MHz. The signal generator output was slowly increased and the audio level monitored. From 1 to 10 uV there was a 7dB increase in output. From 10 uV to the maximum output of the generator the increase was less than 5dB. AGC decay time from 59 (100 uV) was 10 seconds with slow decay and 2 seconds with fast decay. The AGC was very smooth acting in all modes with no hint of pumping or clicking.

The S meter calibration was checked at 14.2 MHz with the following results:

5 0 - 2dB	5 6 - 4dB	9+20	8dB
5 2 - 2dB	5 7 - 4dB	9+30	-9dB
5 3 - 6dB	5 8 - 3dB	9+40	not checked
5 4 - 4dB	5 9 - 9dB	9+60	not checked
5 5 - 5dB	9+10 - 8dB		

It took a signal level of 2 uV to reach S1 and S9 was calibrated at 100 uV. Apart from its reluctance to move off the stop with relatively weak signals, the action of the S meter was very good. You might find quite a few S0 readability 5 signals though.

The increase in the noise floor with an adjacent S9 signal was checked. With 3kHz separation the noise came up 1.5dB with the adjacent signal increased to S9+20dB the noise rose to 14dB. With 5kHz separation these figures decreased to 1 and 8dB respectively.

Tuning the receiver from 30 MHz down to 20 MHz, a time consuming job, revealed a total of 122 kHz. Of these, only six reached an equivalent input of .2 uV. All of the others would be lost in the noise with an antenna connected. Below 500kHz several gurgles were noted possibly emanating from the digital display. Again these were not audible with an antenna connected.

It was noted, during the transmitter tests, the SWR meter was indicating 1.3:1 when feeding a 50 ohm dummy load.

No tests were conducted to determine losses, if any, in the auto ATU. Most of the time it was not used during on air tests but a quick evaluation with a trap vehicle well off its resonant frequency showed that a 3:1 SWR could be easily corrected.

INSTRUCTION BOOK

From an operational point of view, the sixty page instruction manual is well presented. There are three pages devoted to a description of the circuit and three more to basic adjustments and maintenance. The installation of the optional filters, auto antenna tuner and voice synthesiser is also covered.

With a transceiver of the complexity of the 940, operating instructions are of great importance. Each mode of operation is explained with a two page spread showing the operation of each control that is used with that particular mode. Several pages are devoted to memory entry, recall, scanning and direct keyboard entry. Also supplied with the review transceiver was the optional service manual. This consists of 108 pages of technical and service data. I am not sure if a copy of this is supplied with each TS-940. If not, I would recommend that a new owner should invest in one.

SUMMARY

The quickest way to sum up the 940S is to say that it has the lot. Of course if you require a mobile or portable transceiver then one of the smaller, lighter transceivers will perhaps suit better. For home station use it is hard to imagine a more complete rig or how Kenwood are going to improve on this transceiver in the future. Facilities offered are second to none and the overall performance is excellent in all respects.

The TS-940S used for this review was supplied by Tro-Kenwood (Australia) Pty Ltd and all enquiries regarding price and delivery should be addressed to them or one of their authorised local dealers.

EVALUATION AND ON AIR TEST OF THE KENWOOD TS-940S - Serial No S100619

APPEARANCE

Packaging
** Strong carton with foam inserts.
Size
*** Large
Weight
*** All lightweight (20kg) but everything self contained.
External finish
*** Superb finish.
Construction quality
*** Good quality boards and components.
Accessibility seems fair
FRONT PANEL
Location of Controls
*** With 64 separate controls, layout excellent.
Size of knobs
*** All frequently used knobs bigger than average.
Labelling
*** Clear labelling. Mode selection also identified in CW tone.

Status indicators

*** Most functions well indicated

VFO ACTION

Tuning knob
*** Large and smooth action.
Tuning rate
*** Well chosen for SSB and CW. Too fast for AM and FM.
Digital readout
*** Would have to be the best available
VFO stability
*** Impossible to fault. High stability optional oscillator makes it better.

RECEIVER OPERATION

Memory
*** 40 available with mode storage, but only 10 at one time. Memories not tunable.
Slope tune
*** Both high and low end independently variable.
Notch filter
*** One of the best. Sharp notch with little effect on received audio quality.
CW VBT
*** Gives excellent CW selectivity without the use of special CW filters.
CW pitch and tune
*** Selects required CW pitch and changes bandpass tuning to suit.
Spurious responses
*** Quite a few throughout tuning range but all very low level.

S Meter

*** Sluggish at low signal level. Otherwise good - see test section.
AGC performance
*** Excellent response - see test section.
Signal handling
*** No sign of overload.
RTX/TX
*** +/- 9.9kHz on both transmit or receive (selectable) separate offset readout. Main digital display also follows.

Sensitivity

*** Excellent - see test section.
RF attenuator
*** 10, 20 and 30dB handy for checking S meter.
RF gain
*** Smooth progressive action.
NOISE BLANKER
Woodpecker
*** Better than most. Very effective when pulses are sharp and clean.
Ignition noise
*** Cuts it dead.
General electrical noise
*** Very good with most types of domestic noise.

QUALITY OF RECEIVED AUDIO

Internal speaker
*** Better than usual quality from upward facing speaker.
External speaker
NA Matching speaker available as option. Qual ty very good on my USA station speaker.
Headphone output
*** Stereo phones compatible. Output level ideal.
Cooling fan noise
*** Power supply fan often runs during receive. Quite noticeable but not intrusive.

TRANSMIT OPERATION

CW and PEP output
*** Output very flat from band to band. See test section.
Audio response
*** Very smooth quality on all modes.
Compressor
*** Most effective. No flat topping even when overdriven.
Compressor
*** Really adds some punch to speech with no audible distortion.
Metering
*** Compression, ALC, Power in watts, auto SWR, IC and VC (PA stage metering).

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Full 12 month warranty

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inc. M1188 mic

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- * SSB CW AM FM modes. AM filter al included!
- * IF shift-width filters included Speech processor inc
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- FC-757 GX\$199
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WITH 2M MODULE

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6M MODULE \$299
70cm MODULE \$399

- Sensitivity 5µV on SSB Shift & Width
- USB LSB-CW-FM modes & repeater rev
- 10W RF output on 2m
- 10 ch Memory Stores Mode Frequency & Searches
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- YAESU FT 2700R dual bander\$845
- YAESU FT-703R UHF FM available
- YAESU FT 209R w/ FNB-4, 2m FM, 3 W Handie transceiver\$399
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PMT, 3/25W RF output
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- * HL 160V25 25W 160W FET pre-amp 2 mtrs\$419
- * HL 110V 3/10W 120W, FET pre-amp, 2 mtrs\$339
- * HL-85V 10W 80W GaAsFET rx 2m Linear\$248
- * HL 62V 10W 60W, GaAsFET pre-amp, 2m Linear\$179
- * HL35V 3-30W, GaAsFET pre-amp, 2m Linear\$119
- * HL-86V 10W-80W, FET pre-amp 6m Linear\$229
- * HL 200E 10W 200W, 3 30MHz Linear\$229

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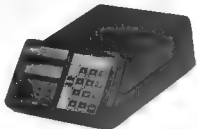


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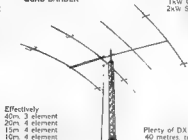


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memory etc. Inc. MC42S
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140-525 MHz, 4-20.000W

● SP-122 2kW\$139
1.6-60 MHz, 20-200.000W

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top & bottom mast clamps \$169
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with 'N' socket ... \$189
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1985 FEDERAL CONVENTION



The 49th Annual WIA Convention was held in Melbourne from the 26th to 28th April 1985. Federal Councillors and Alternate Federal Councillors from all Divisions attended. Observers were present from VK3 and VK5. All members of the Executive were in attendance, along with several Federal Co-ordinators and members of the Federal Technical Advisory Committee.

The Executive, elected to serve for 1985, is as follows.

President David Wardlaw VK3ADW
Alan Foxcroft VK3AE
Earl Russell VK3BER
Peter Wolfenden VK3KAU
Michael Owen VK3KI
Ron Henderson VK3IRH
Ross Burstall VK3CRB
Jack O'Shannassy VK3SP
Bill Rice VK3ABP
Gordon Bracewell VK3XX

The President, David Wardlaw, opened the Convention by welcoming the delegates and asking the Convention to stand for one minute silence in memory of Peter Dodd VK3CJF, the first full-time Secretary/Manager of the Institute.

The Convention then moved on to the Reports of Federal Officers (some 17). The President's Report is reproduced later in this article. Other reports of note were: the Report of the IARU Officers which dealt with the continuing problems of the IARU Constitution and 10MHz narrow band usage.

The Convention endorsed the Constitutional amendment proposals to be discussed further with the ZL IARU representative at the NZART Conference. The conflicting needs of the 10MHz band plan were discussed, the value of voice modes, in our geographical isolation was acknowledged, but the International recommendations should be observed. The Convention agreed to quia fly the Australian band plan in the respect that narrow band usage be adopted for communications beyond the Australian call areas.

The Treasurer's Report gave an overview of operations in conjunction with the Auditors figures and some form of indexing the reserves of the Institute was agreed.

The Editor made the delegates aware that Amateur Radio was being produced within the budget predicted and there was spirited discussion on the subject of the type size. The questionnaire, which members received with this year's subscription renewal, has proved a useful exercise. Members of the Publications Committee were still to study the final Report.

After discussion of the reports, the Convention moved to agenda items.

Minor amendments to the Articles and Memorandum of Association of the Federal body were discussed and agreed unanimously. These changes are before the Corporate Affairs Office (Victoria) for agreement.

The ratification of the VK0 and VK9 call areas were discussed and it was agreed that the Executive should approach the Department of Communications at its next Joint Meeting. As examples of the proposal, VK0H would refer to Heard Island and VK9X would refer to Christmas Is and.

The WICN calling frequencies as published in Amateur Radio were adopted.

A proposal to remove the age limit on licences was discussed and it was agreed that representations to the Administration should be made that licences be issued in respect of ability to pass the required examination.

The post on of HF beacons was debated and the ARL representatives given guidance to take the IARU Reg on 111 representatives in November.

It was agreed to create a Trust Fund for the training and assistance of potential amateurs in the developing

islands of Region 111. The funding of this Trust to consist solely of donations/requests from members.

The mechanism of band planning was discussed and agreed upon, this motion was to ensure that hasty decisions would not be made.

The Convention decided that the Divisional subscription table would no longer be printed in Amateur Radio or any other publication in the future, as the differential in subscriptions shown in the tables as printed, did not clarify the different services offered by each Division.

A motion to frequency restrict contests, as carried out by some other Societies, was discussed at length — the final agreement being that the Federal Contest Manager could restrict the frequencies used in contests at his discretion.

The Convention discussed the policy with regard to Packet Radio. It was agreed that the matter of Protocols should not be included in the policy statement when issued as it was felt that by recommending protocols experimentation could be inhibited. The policy statement should only address itself to Regulatory and Operational requirements. The Federal Technical Advisory Committee was tasked with raising a draft policy for discussion.

This is a very brief outline of some of the items discussed and voted upon, if you require more detail, please contact your Federal Councillor.

PRESIDENT'S REPORT — 1984/85 75TH ANNIVERSARY

The WIA, the world's oldest national amateur radio society, is 75 years old this year. Naturally the Executive has spent a reasonable amount of its time in ensuring that this Anniversary will be adequately celebrated.

The 75th Anniversary Co-ordinating Subcommittee, chaired by Jack O'Shannassy VK3SP, was created at the first meeting of the Executive for the year. Other members of the Committee are Peter Wolfenden VK3KAU, Jim Linton VK3PC, Earl Russell VK3BER, Greg Williams VK3BGW, Max Hull VK3ZS, John Hill VK3WZ and Reg Macey. Thanks must be given to this Committee for all the hard work they have put in.

All Divisions are participating in Anniversary activities, which have been well publicised in Amateur Radio.

Australia Post will be issuing a pre-stamped envelope in recognition of our 75 years of existence. Max Hull, a past Federal President, and the present Federal Historian, has been a major force in this achievement. I must admit that we had originally hoped for a commemorative stamp, but, as explained by Australia Post, we unfortunately did not meet the criteria for the issue of a special stamp.

In November there will be a special Anniversary Dinner — a very important guest being Dick Butler, the Secretary-General of the ITU.

A special Anniversary Call-sign, VK75A, has been authorised by the Department of Communications. The issue of this call-sign was a special and important gesture by the Department of Communications in recognition of our 75 years of existence.

The CW Contest will already have been held, and there is to be a National "Foxhunting" Contest.

COMPUTER "IN HOUSE"

In accordance with a resolution of the last Federal Convention, the WIA has purchased its

own computer at a very competitive price, and like most other users of new computers, has run into the usual teething troubles. However at the time of writing this report it appears that all problems have been resolved. The computer is a Dual Processor 8/16 bit Cromemco System One.

RADIO COMMUNICATIONS ACT

The Radio Communications Act was passed in September 1983, but at the time of writing this Report, still has not been proclaimed. Naturally there will be a new set of regulations under this Act, and I am pleased to report that the WIA was offered every opportunity to comment on various drafts of the Radio Communications Bill and was successful in having most of its comments acted upon.

The value of the ability to be able to input material during the drafting of the Bill is almost impossible to estimate. We, in Australia, are lucky to have such good liaison with our DOC.

The length of time it has taken to proclaim the new Act has led to problems with the Amateur Operator's Handbook. Copies of the old book have run out and more are needed for exam candidates. DOC proposed that an interim update be produced to provide information for exam candidates. Even without the new Act there are a number of changes that arise from concessions gained by the WIA since the last revision of the Handbook in 1978. Also there are a number of changes due to WARC 79, not only in frequency bands but also in the classification of emissions. DOC put pressure on the WIA to produce comment on their draft of this interim handbook. With very little lead time the Divisions rose to the occasion and provided the CASPAR Committee with comment at very short notice.

The CASPAR Committee prepared a comment based on a limited life temporary Handbook. As many of the comments from the Divisions also contained matters that could well be applied to a complete revision of the Handbook, they were, at that stage, put to one side for future use. Time went by and no action on printing by the DOC. In the meantime CASPAR was charged with looking at the existing regulations under the Wireless Telegraphy Act and their relevance to existing practices and privileges of amateurs. Further discussions with DOC made it apparent that a much more detailed revision may take place and that the old book will be reprinted as a stop gap. CASPAR luckily has a deal of material on hand for further negotiations.

DUAL CHANNEL TV SOUND CHD. CH5A

The introduction of dual channel sound for TV broadcasting in Australia is a matter of grave concern to the WIA. This is because the occupied bandwidth will be greater than the 7MHz allocated channel width and TV channels are adjacent to our 2 VHF bands. The WIA has exchanged correspondence with the Minister and we feel his replies are not completely satisfactory, particularly with reference to prior consultation, and also the apparent new method of frequency planning on the 'give and take' principle. However, one item of good news is that there is a sunset on CH5A albeit somewhere in the future.

The extension of the use of ChD by the SBS — although a problem for those 50MHz operators in South Australia and Tasmania, who had hoped for more liberal use of the low edge of the 50MHz band — gives the public more time to learn about UHF, while keeping other new TV stations from

obtaining access to CH0. The Minister has pointed out the reception problems of CH0 stations and says it is unsuitable for metropolitan areas. However, it still remains an Australian TV allocation. SBS will cease using CH0 from December 1985.

The DOC was aware of our concern about the possibility of additional interference to amateur stations by TV stations using dual carrier sound on TV channels adjacent to our band, and requested a meeting to specifically discuss the subject.

It was said that offsets could and probably would be used which would prevent any increase in interference to amateurs from dual carrier sound as used on CH5A and CH0.

ATV on 576MHz

With the increasing usage of the UHF band for TV the 576MHz temporary allocation to amateurs could be in jeopardy. A submission has been made to the Secretary of the DOC outlining a number of alternatives which would allow ATV continued access to this part of the spectrum. One proposition is that as its use is for ATV, the frequency need not necessarily be uniform throughout Australia. To date we know the submission is receiving attention within DOC.

IMPORT DUTY

The importation of amateur transceivers under buy and sell continues where the technical expert advisers to the Institute certify that the specific equipment will not transmit on other than amateur bands without substantial modification. This requires the certification of individual batches of equipment. In order to cover costs a fee is charged which, as was indicated in the original announcement of the scheme, is not waived. The scheme certainly poses problems for the individual amateur importer, but at the time the scheme was considered to be a compromise that would provide benefit to the greatest numbers.

When the Radio Communications Act is proclaimed it would appear that a new set of conditions would apply which should change the WIA's involvement.

PHONE PATCH

On the matter of phone patch Telecom would not waive the \$2.00 per month charge, but there would be no 10 min charge for calls from amateurs.

EXAMINATIONS

The WIA and the DOC are closely co-operating in the exam nation area. We have been asked to give assistance in the preparation of material for exam nations and are in a position to monitor standards. The DOC has expressed their gratitude as to our assistance, particularly in the way that we make it as easy as possible for candidates to sit for all parts of the examinations and thus require many more different papers to be available. Of course the overall responsibility for the exams in all aspects lies with the DOC.

The DOC has now formalised its arrangements for testing amateurs who so desire at higher Morse code speeds — a fee of \$20.00 is to be charged and a formal letter accreditation will be provided.

JOINT MEETINGS

The WIA and DOC continues to hold their regular quarterly joint meetings, at these meetings agreement and clarification has been reached on many subjects. The DOC has agreed that there will be no difficulty in these meetings continuing in Melbourne even after the transfer of the remainder of central office staff to Canberra.

AMATEUR SATELLITES

During the year there will be an ITU World Administrative Conference to deal with planning the Geostationary Satellite Orbit. The Agenda for this conference covers all satellite services including the Amateur Satellite Service.

A CCIR Conference Preparatory Meeting produced a report which makes no suggestion to alter the conditions applying to the Amateur Satellite Service. There is remote possibility that the Amateur Satellite Service could be swept up in

some broad Satellite regulations which are not appropriate to the Amateur Satellite Service. The WIA is in contact with members of the Australian delegation, and has indicated our concern as to this possibility. The IARU will be represented at the Conference.

STANDARDS

During the year the WIA became a contributing member of the Standards Association of Australia and is represented on Committee TE3 by Alan Foxworth VK3AE, who chairs the working group on immunity. Dick Huey VK2AHU and Jim Lloyd VK1JL are also involved in helping the WIA on Standards Association matters in a number of areas, including the Standard involving non-ionising radiation.

PACKET RADIO

During the year the implications of packet radio have been studied by the FTAC with submissions having been received from a number of sources. (The DOC has also shown some interest in this aspect of amateur radio). The matter of protocols seems to have caused some controversy but this is not an important regulatory issue so much as an internal amateur issue. To date the approach is to leave as much self regulation as possible within the understood bases and purposes of the amateur service. No doubt much more will be heard on the subject in the future.

THIRD PARTY TRAFFIC

The Institute has requested that DOC conclude third party agreements with at least the same countries that have agreements with Canada and USA. The replies received so far have not been very helpful.

AMATEUR ADVISORY COMMITTEES

On studying the WIA submission on Amateur Advisory Committees, the DOC replied to us in the following manner:

While the Department recognises the valuable contribution made by AACs to the Amateur Service since their inception, it has been decided that the rigid committee structure should be discounted and replaced with informal meetings. Noting, however, the differing views within the Institute on AACs, the format and timing of these informal meetings will be left open to negotiation between State Managers and the Institute's Divisional representatives. It is considered that this flexible arrangement should cater for individual State requirements and continue to provide a valuable forum for liaison between the amateur fraternity and the Department.

IARU

The matter of an international amateur licence and reciprocal licensing will be the subjects for WIA submissions to the IARU Region 3 Conference in Auckland this year.

At a meeting of the Executive a presentation was made to All Chandler VK3LC, on behalf of the IARU Region 3 Association in recognition of his work as Region 3 Intruder Watch Co-ordinator for many years.

The WIA has been invited to attend the NZART Conference in Christchurch this year. This is in accordance with an arrangement made some years ago where one year the NZART would be represented at the WIA Federal Convention and the next year the WIA would attend the NZART Conference and so on. These reciprocal visits have proved to be very fruitful. This year there is the very important issue of amendments to the new IARU Constitution to be discussed. The WIA and the NZART hold similar views on many aspects and a unified approach could vastly help to put these matters across with a great deal more strength.

At the IARU Conference at the end of the year, there are a number of matters, apart from the Constitution, which will be the subject of Agenda items from the WIA. Many of these matters arise out of Federal Council resolutions.

The WIA received a copy of a notice of proposed Rule making by the FCC (USA) which concerned the assignment of frequency between 7 100 and

7 300MHz for a shortwave broadcasting station on Guam Island, which is administered by USA but is within ITU Region 3 and therefore could have an allocation within this band unlike the rest of the stations administered by the FCC which are in Region 2. In Region 2, 7 100-7 300MHz is an amateur band, not a broadcast band. While understanding the facts of regional allocations the WIA corresponded with the ARRL, expressing our views. A reply from the ARRL has let us know that they have submitted an objection to this Notice of Rule Making. To date the results are unknown.

SPECIAL LEGACY

A legacy of \$500 was received from the Estate of the late W. Oly. In order that this is not lost in general funds, this legacy will be used to update our promotional material.

DEATH OF PETER ODDO

In early March this year Peter Dodd VK3CJF, our first Secretary-Manager, passed away in his 12 years of tireless service to the WIA. Peter was intimately involved in many advances made by the WIA during the period. This year Peter volunteered to assist Max Hull with the preparation of Historic material for the 75th Anniversary. Unfortunately his deteriorating health forced him to relinquish the job.

DUTIES

As Bill Rice VK3ABP is now Editor of Amateur Radio, he felt he could no longer act as Chairman of FTAC, and Peter Gamble VK3YRP has taken over the position.

Gordon Bracewell VK3XX was appointed Chairman of the CASPAR Committee last year. His Committee has been working on the Amateur Operator's Handbook and also the regulations under the Act.

It is with sadness I report the death of our former Secretary-Manager, Hugh Spence VK8FS. Bill Hempel VK4LC has taken over the job.

Thanks to Fred Robertson-Mudie VK1MM for all the work he is doing for the Executive.

This year we have a new Contest Manager, Ian Hunt VK5QX, a well-known Contestmaster and Past President and Federal Councillor of the VK5 Division. I thank Ian for taking on this difficult job. In this report, I am a cutting number of matters to the Executive Council. A postal motion on several contest matters was deferred until the Convention as Article 44 of the Constitution was invoked.

For the first time in the history of the WIA a member of the Executive, Ron Henderson VK1RH lives interstate — this was possible because Ron's work brought him to Melbourne regularly. Ron is also the Federal VICEN Co-ordinator, and took on the task of updating the WIA policy book and has produced an updated listing of WIA policies.

Early this year we lost a hard worker when Tony Treggie VK3QO resigned from the position of EMC Co-ordinator and as a member of the Executive. Tony has extended a great deal of effort in providing the EMC service for the WIA and our sincere thanks go to him for this.

Alan McCroft, our first Deputy Vice-Chairman, represents the WIA at the SAA.

Jack O'Shannassy VK3SP and Peter Woffenden VK3KAU have been very busy on the 75th Anniversary Committee.

Earl Russell VK3BR is very much involved with the WIA Computer and office liaison.

Ross Burtall VK3GRB is our new treasurer, has capably filled this position vacated by Courtney Scott VK3BG.

Michael Owen VK3KI is joint IARU Liaison Officer and provides valuable help on constitutional, legal and administrative matters. He is also a director of the IARU Region 3 Association.

Our Intruder Watch Co-ordinator, Bill Martin VK2COP has had some success this year.

In other fields:
Max Hull VK3ZG, Federal Historian
John Ingham VK5KG, Federal Video-tape Co-ordinator
Fred Robertson-Mudie VK1MM, Federal RTTY Co-ordinator
Max Hull VK3ZG, Federal Historian
John Ingham VK5KG, Federal Video-tape Co-ordinator

Brenda Edmonds VK3KT, Federal Education Co-ordinator
John Stevens VK4AFS, Federal Asst Co-ordinator
Graham Ratcliff VK5AGR, Federal AMSAT Co-ordinator
Bli, Roper VK3ARZ and Ron Fisher VK3OM continue to provide that valuable service, the Federal Broadcast Tapes.
I would like to pay tribute to our Secretary-Manager, Reg Macay and his staff
John Hill VK3WZ, Advertising Manager (part time)
Mrs Ann McCurdy (part time).
Mrs Helen Wengenigen (part time)

OFFICE

This has been a hard year in the office with the acquisition of our own computer, which has necessitated considerable re-arrangement of the office and procedures. Those visiting will appreciate the improvement.

Reg has been a tower of strength to me and I hope you all appreciate the hard work he puts into the job. Reg is the only full time officer, the other staff are employed on a part time basis.

The Federal office has continued to provide support to myself and the Executive and through them to the Divisions and membership as a whole. During the year the Secretary has made further changes to the physical layout of the office as well as giving it a much needed coat of paint. This has given the staff a more amenable working atmosphere as well as providing a better environment for Executive and sub-committee meetings. Some changes were necessitated because of the introduction of the new computer and associated hardware. All office equipment likely to produce distracting noise is now grouped at one end of the office.

Despite the re-arrangement within the office it is still overcrowded and lacking storage space. This is becoming a serious problem and one to which the Executive must address itself in the near future.

The general workload on the office is steadily increasing, partly because of the organizational involvement with the 75th Anniversary activities. Much of this extra workload has had to be handled by the Secretary himself, partly because of its nature but many because the other office staff are fully occupied with their own regular duties. There is far more work than one person should be expected to handle even though the Secretary regularly writes up minutes of meetings in his own time. The Executive has been able to provide some voluntary assistance to the office to alleviate the necessity to employ temporary staff.

It is anticipated that when the computer system is fully operational this situation will be eased.

Betken Productions continued to contribute to the high standard of 'Amateur Radio' this year and by diligent negotiations enabled us to hold our costs down in a number of areas.

It is disappointing to note that there was a slight reduction in the number of members last year, I hope that in this 75th year we will have a significant increase.

In closing this report I would like to thank all those of you who provided me with such great assistance throughout the year.

DAVID WARDLAW VK3ADW,
FEDERAL PRESIDENT

MEMBERSHIP STATISTICS

All statistics are to 31st December 1984 (previous year in brackets). DOC statistics (as supplied to WIA) refer to licences issued, where WIA statistics refer to individual amateurs.

Table 1

	Total Licences DOC	WIA Licences	% members in WIA	Other WIA members	Total members
VK1	338(321)	215(197)	66	17	232
VK2	4708(4582)	2195(2194)	47	98	2293
VK3	4444(4447)	2206(2195)	50	91	2297
VK4	2292(2482)	1291(1294)	57	46	1337
VK5	1844(1673)	1032(1047)	56	74	1106
VK6	134(127)	71(68)	53	37	75
VK7	96(93)	57(52)	59	12	71
Total	15744(15453)	7967(7748)	56	521	8488

Table 2
Percentage increase/decrease (31/12/84 compared with 31/12/83).

	DOC Licences	WIA Licences	Total WIA members
VK1	+1	+1	+3
VK2	+1	17	1
VK3	+1	+1	3
VK4	+1	+1	3
VK5	+1	-1	3
VK6	+1	+1	2
VK7	+1	1	2
Total	+2	+1	-2

Table 3
DOC Licences by grade 31/12/83 to 31/12/84.

	Fell	Unlimited	Novice	Combined	Totals
VK1	182(179)	57(61)	15(16)	19(22)	308(287)
VK2	2622(2518)	301(370)	11(12)	285(224)	4739(4582)
VK3	2250(2231)	1012(1015)	19(882)	293(269)	4444(4447)
VK4	1332(1255)	301(323)	61(781)	221(183)	2500(2482)
VK5	1053(1029)	200(217)	207(12)	133(172)	1684(1673)
VK6	126(120)	200(162)	222(240)	86(72)	534(521)
VK7	32(30)	104(102)	94(82)	26(20)	262(254)
Total	8676(8378)	2827(2773)	3166(3345)	875(984)	15744(15388)

Table 4

	WIA members by Grade										Total
	F	C	A	T	S	X	L				
VK1	191	17	1	7	3						222
VK2	971	790	98	46	308	26	28	7			2293
VK3	1272	556	191	49	270	50	39	28			2297
VK4	505	523	48	39	147	11	38	7			1337
VK5	287	257	74	23	17	18	13				1106
VK6	309	179	37	21	7	11	25	6			751
VK7	153	96	12	9	12	2	4				292
Total	4653	3275	475	287	972	133	162	94			8488

Note Membership Grades:
F = Full, C = Country, A = Associate, T = Town, G = Pensioner, S = Student, X = Family and L = Life Membership.

APPENDIX 2

Attendance at executive meetings from 17th May 1984 to 18th April 1985 inclusive

	Attended	No. Possible
Mr D Wardlaw	13	13
Mr A Foxcroft	13	13
Mr E Russell	11	13
Mr R Burstall	10	13
Mr W Price	13	13
Mr T Tregalio	6	8
Mr J O'Shannassy	11	13
Mr P Wollenden	10	13
Mr J Oswald	7	13
Mr R Henderson	6	13
ALSO ATTENDED:		
Mr R Macay	13	
Mr G Braccwell	5	
Mr P Gamble	8	
Mr B Bathols	2	
Mr C Scott	1	
Mr K Seddon	1	
Mr I Hunt	1	
Mr R Hartkopf	1	
Mr J Hill	1	
Mrs B Edmonds	2	

DIRECTORS' REPORT

The Directors of the Wireless Institute of Australia submit their report with respect to the profit of the Institute for the financial year ended 31st December 1984 and the state of the Institute's affairs as at that date.

The Directors of the Institute in office at the date of this report are:

Wardlaw, D.A.	VK3ADW	President
Foxcroft, A.	VK3AF	Vice President
Burstall, R.	BE	Honorary Treasurer
Wollenden, P.A.	VK3KAU	
Russell, F.R.	VK3GBR	
O'Shannassy, J.A.	VK3SP	
Owen, M.J.	VK3KI	
Henderson, R.G.	VK11RH	
Rice, W.M.	VK3ABP	

The principal activities of the Wireless Institute of Australia are to:

- Represent generally the views of persons connected with amateur radio in the Commonwealth of Australia, its territories and dependencies.
- Promote the co-operation between the Divisions in the encouragement and development of amateur radio.

(c) Safeguard the interest of the Divisions and the members in relation to frequency allocations rights and privileges

(d) Promote the development progress and advancement of amateur radio in all matters in relation to amateur radio in general.

The profit of the Institute for the year ended 31st December 1984 was \$18,078 (1983 profit \$13,948). No provision for income tax is required as the Institute is exempt from paying income tax under the provisions of the Income Tax Assessment Act.

No dividends have been paid or declared since the end of the previous financial year.

There were no material transfers to or from reserves or provisions during the financial year other than those disclosed in the accounts.

In the opinion of the Directors the results of the Institute's operations were not substantially affected by any item, transaction or event of a material nature.

The Directors took reasonable steps before the profit and loss statement and balance sheet were made up to:

- Ascertain what action had been taken in relation to the writing off of bad debts, and adequate provision to be made for doubtful debts.
- Ascertain whether other current assets would realise, in the ordinary course of the business, their value as shown in the accounting records of the Institute, or to see that the unrealisable portion had been fully provided for if not already written off.

At the date of this report:

- The Directors are not aware of any circumstances which would render the amount written off for bad debts or the amount of the provision for doubtful debts inadequate to any substantial extent.
- The Directors are not aware of any circumstances which would render the values attributed to current assets in the accounts misleading.
- There does not exist any charge on the assets of the Institute which has arisen since the end of the financial year, and secures the liability of any other person.
- No contingent liability has arisen since the end of the financial year.
- The Directors are not aware of any circumstances not otherwise dealt with in this report or accounts which would render any amount stated in the accounts misleading.

No contingent or other liability has become enforceable, or is likely to become enforceable, within the period of 12 months after the end of the financial year which, in the opinion of the Directors will or may substantially affect the ability of the Institute to meet its obligations when they fall due.

In the interval between the end of the financial year and the date of this report no item, transaction or event of a material and unusual nature has arisen that is likely, in the opinion of the Directors, to affect substantially the results of the Institute's operations for the next succeeding financial year.

No Director of the Institute has, since the end of the previous financial year, received or become entitled to receive a benefit.

The auditors, Messrs Hebard & Gunning, have informed the Institute that following upon an examination of the accounts they are now practicing in the name of Touche Ross & Co. The Directors have agreed to the continuation of their appointment in that name and accordingly the audit opinion for the current year has been issued in the name of Touche Ross & Co.

Signed C.A. Wardlaw
R. Burstall

Cashfield,
12th April 1985

THE WIRELESS INSTITUTE OF AUSTRALIA BALANCE SHEET AS AT 31ST DECEMBER, 1984

MEMBERS FUNDS	1984	1983
Brought forward	\$55,108	\$41,153
Net profit for the year	18,078	13,948
	\$73,187	\$55,101

These items are represented by:

CURRENT ASSETS

Cash in hand	14303	173	56
Trade debtors			10162
Less provision for doubtful debts	(2000)		(2000)
		12303	8862
Prepayments		1146	0
Stock on hand			
Note 1(c)		2963	13634
		19545	23662

DEDUCT CURRENT LIABILITIES

Bank overdraft	1442	(23614)	
Trade creditors	2680	4141	
Other creditors	2050	0	
Provision for annual leave	4313	2083	
Provision for smaller satellites	0	2872	
Government grant	500	500	
Subscriptions in advance			
Note 1(a)	87011	114034	
Debtors WIA	0	500	
Accounts payable to state Divisions	20803	41762	
Rob Weirson		1729	1523
Administration Award		13933	13933

WORKING CAPITAL DEFICIT

carried forward	\$10947	\$11989	
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ADD FIXED ASSETS

Office equipment at cost	3557*	18094	
Less accumulated depreciation	(10917)	(8950)	
		9430	
Furniture & fittings at cost	1213	0	
Less accumulated depreciation	(26)	0	
		1117	
		2377	9430

INVESTMENTS — AT COST

Australian Resources Development Bank	5800	5800	
Short term deposits	14180	151846	
		157646	
		157646	157646

NET ASSETS

To be read in conjunction with the attached notes.
* One-third of total computer amount paid.

THE WIRELESS INSTITUTE OF AUSTRALIA PROFIT AND LOSS STATEMENT FOR THE YEAR ENDED 31ST DECEMBER 1984

	1984	1983
OPERATING PROFIT BEFORE INCOME TAX (Note 2)	18,078	13,846
After charging (crediting)		
Auditors remuneration		
— auditing		
— this institution	1,800	—
— other services	—	1,150
(No other benefits were received by the auditor)		
Amexa letters	7,754	—
Depreciation	4,150	3,205
Interest received	(14,455)	(14,020)
Income tax expense (Note 1 (b))	0	0
OPERATING PROFIT ACCUMULATED FUNDS 31st January 1984	18,078	13,846
ACCUMULATED FUNDS 31st December 1984	35,109	41,183
	35,109	41,183

THE WIRELESS INSTITUTE OF AUSTRALIA NOTES TO AND FORMING PART OF THE ACCOUNTS FOR THE YEAR ENDED 31ST DECEMBER 1984

NOTE 1 — ACCOUNTING POLICIES

Accounting policies which have been consistently applied in the presentation of the financial position and results of operations are in accordance with the accounting standards issued by the Australian accounting bodies. The accounts have been prepared under the historical cost convention, and therefore do not reflect changes in purchasing power of money or, except where specifically stated, current valuations of non-monetary assets.

(a) Subscriptions are accounted for on a cash basis, with the exception of subscriptions paid in advance which are taken up as current liabilities.

(b) Fixed assets are depreciated at the rate of 20% based upon the prime cost method.

(c) Stock on hand is valued at the lower of cost and net realisable value.

(d) The company is a non-profit organisation, and no income tax is payable for the year ended 31st December 1984.

NOTE 2 — REVENUE

Subscriptions	\$185,819
Advertising	40,892
Interest	14,454
Other	23,897
	\$272,662

WIRELESS INSTITUTE OF AUSTRALIA (INCORPORATED IN AUSTRALIA)

In the opinion of the Directors of the Wireless Institute of Australia:

(a) The Profit and Loss Statement is drawn up so as to give a true and fair view of the Profit of the Institute for the financial year ended 31st December 1984.

(b) The Balance Sheet is drawn up so as to give a true and fair view of the state of affairs of the Institute as at the end of the financial year.

(c) At the date of the statement, there are reasonable grounds to believe that the Institute will be able to pay its debts as and when they fall due.

Signed on behalf of the Council
D. A. Wardlaw
R. Guralst

Caution,
12th April 1985

AUDITORS' REPORT TO THE MEMBERS OF WIRELESS INSTITUTE OF AUSTRALIA

We have audited the accounts in accordance with Australian Auditing Standards.

In our opinion:

(a) the accounts are properly drawn up in accordance with the provisions of the Companies (Victoria) Code and so as to give a true and fair view of

(i) the state of affairs of the company at 31st December, 1984 and of the profit of the company for the year ended on that date.

(ii) the other matters required by Section 299 of that Code to be dealt with in the accounts;

and are in accordance with Australian Accounting Standards.

(b) the accounting records and other records, and the registers required by that Code to be kept by the Company have been properly kept in accordance with the provisions of that code.

EXCELLENCE PRINCIPLES & ELL

Signed, A. P. McGee — Partner
Chartered Accountants

Moonsbinn
12th April 1985

DISCLAIMER

The additional financial data presented in the following columns is in accordance with the books and records of the Wireless Institute of Australia, which have been subjected to the auditing procedures applied in our statutory audit of the company for the year ended 31st December 1984.

It will be appreciated that our statutory audit did not cover all details of the additional financial data. Accordingly, we do not express an opinion on such financial data, and no warranty of accuracy or reliability is given.

Neither the firm nor any member or employee of the firm undertakes responsibility in any way whatsoever to any person (other than Wireless Institute of Australia) in respect of such data, including any errors or omissions therein however caused.

Touche Ross & Co.
Chartered Accountants

12th April 1985

THE WIRELESS INSTITUTE OF AUSTRALIA DETAILED PROFIT AND LOSS STATEMENT FOR THE YEAR ENDED 31ST DECEMBER, 1984

	1984	1983
AMATEUR RADIO INCOME		
Subscriptions	3203	2400
Advertisements	4882	4614
Interest & dividend notes	1594	2410
Sundry income	12	0
	50721	51689
LESS EXPENSES		
Rentals	230	0
Bank posts	24547	21191
Drafting	580	4614
Emoluments	5744	8
Printing	53367	74211
Swindles	1185	0
Salaries	26388	26775
Telephone	1370	0
Travel	6205	14869

Typewriting

Wapings

NET LESS

GENERAL

INCOME

Occasions

— Other

— Import duty by-law

Interest received

Technical committee

Car Book

WGA Book Vol 1

Subscriptions

Magazines & publications

Sundry income

LESS EXPENSES

Amexa letters

Audit and accounting fees

AMSA

Awards

Bank Charges

Committee expenses

Convention expenses

Depreciation

Electricity

EDP expenses

General expenses

Import duty by-law

Insurance

IAU dues

Membership recruiting

Postage & freight

Printing, stationery & office supplies

PR activity

Rent & rates

Repairs & maintenance

Salaries & honoraria

Telephone

Travel

NET PROFIT

TOTAL NET PROFIT

1984

1983

1984

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17167	0
8230	5990
143151	137945
(189429)	(109977)
913	1550
0	150
0	1400
14454	14020
5185	0
13883	17*01
0	88
182556	177996
2350	985
485	0
218531	210367
7734	2263
2730	538
(1903)	0
24	207
1302	1952
1707	394
8581	7904
4158	3098
781	545
EDP expenses	4490
General expenses	577
Import duty by-law	1293
Insurance	3830
IAU dues	1532
Membership recruiting	5818
Postage & freight	5833
Printing, stationery & office supplies	1154
PR activity	5136
Rent & rates	1915
Repairs & maintenance	48561
Salaries & honoraria	55328
Telephone	1592
Travel	3420
	(111833)
	(110444)
NET PROFIT	8107496
TOTAL NET PROFIT	139878
	899862
	139878

This is the Detailed Profit and Loss Statement referred to in our disclaimer dated 12th April, 1985.

Touche Ross & Co.
Chartered Accountants

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INTERNATIONAL NEWS

THE 60TH ANNIVERSARY OF IARU

In every walk of life, achievement results in great part from the ability of leaders to have a vision of the future, from the ability to look beyond today's petty problems and see what might be.

Thus it was that in 1924 Hiram Percy Maxim and the American Radio Relay League (ARRL) realised that amateur radio had become international in scope, and that there ought to be an international organisation to take advantage of the progress and to tackle the problems that would surely attend such a growth. So in March 1924 Mr Maxim met with a group of talented amateurs in Paris, and made preliminary plans for an international amateur organisation to be known as the International Amateur Radio Union (IARU), with a Congress to be held in April 1925 to effect the permanent organisation. Present at the 1924 meeting were enthusiastic representatives from France, Great Britain, Belgium, Switzerland, Italy, Spain, Luxembourg, Canada and the USA.

During the Easter holidays of April 1925, the amateur radio representatives of 23 countries met again in Paris to officially create the International Amateur Radio Union and to adopt a constitution. The original IARU differed a bit from what we have today, but the goals were the same — to promote and co-ordinate amateur radio worldwide, to encourage fraternity and to represent amateur radio at international conferences. In the original organisation individual amateurs became members of IARU, and Mr Maxim was member number one. When most of the 23 countries represented at the first meeting were from Europe, there were also representatives from North and South America, and from Japan.

On 17 April 1925, the constitution of IARU was unanimously adopted, and on 18 April at the final plenary session (by which 15 member countries were in attendance), all actions of the organising Congress were approved, and the International Amateur Radio Union was born.

As an aside, it is fascinating to note that two individuals who participated in those 1924/1925 meetings are still alive and are active radio amateurs. One is Dr G. J. Salom, OAC, operating on the air regularly from his home in Venice and Rome. He visited the Region 1 ARU conference in Cefalù, Sicily, last year, and he is a hale and hearty 82 years of age. Dr Salom is a physical sciences and late graduate and served for 30 years in the Italian Navy. The other IARU pioneer is Jean Wolff LX1JW, who is a familiar figure at amateur radio meetings throughout Europe and in the USA. He served the US Army with distinction in WW II and was a member of the Luxembourg telecommunications administration. He, too, is in fine health and is a great source of knowledge about amateur radio throughout the years.

Although IARU started out life with individual memberships, it was later changed to a union of member societies and now has 121 national societies as members, with two more applications pending. As a result, IARU represents the international interests of one and a half million radio amateurs.

The history of IARU has been that of gradually increasing effectiveness and there are clear signs that the effectiveness has increased markedly in the past decade. The Union has grown from one whose emphasis was largely on the issuance of Worked-A-Continents certificates and the reporting of exploits of long-distance communication (DX), to one whose primary emphasis is on the preparation for international telecommunications conferences.

And yet back in 1925 in the earliest days of international radio regulation of any sort, when international DX was still a rare occurrence, those

men of vision who put together the first IARU constitution recognised that preparation for conferences was an important goal for IARU.

It was the continued emphasis on that goal of conference preparation that led to the restructuring of IARU subsequent to 1979, a restructuring that has made IARU more truly international not only in scope but in administration and leadership. Now, the decisions made in the name of IARU are reached by a body — the IARU Administrative Council — which has on it two representatives from each of the three IARU regions.

There are some growing pains when adapting to a new organisational structure, but there is every indication that it is better prepared to handle the next General WARC than it was for WARC-79. IARU has a more truly international leadership, and continues to have the substantial support of ARRL, whose distinguished president, Hiram Percy Maxim, got the ball rolling in the first place 60 years ago.

In the history of mankind, 60 years is but the blink of an eyelid, hardly to be noticed. In the history of amateur radio, 60 years is a long time indeed.

(The above was originally written for the April 1985 issue of OST, the official journal of ARRL, which serves as the International Secretariat of IARU.)

HF BAND PLANS

At its meeting in Paris last July, the Administrative Council of the IARU requested that the Secretaries of the three Regional Secretariats send copies of regionally adopted band plans to the International Secretariat for publication "in a format that will permit comparison".

Here are the band plans for the bands below 30 MHz. The plans that have been adopted for bands above 30 MHz will be presented in the future.

The members of the Administrative Council are to attend the November meeting of the Council prepared to discuss the band plans, with the objective of adopting such internationally recognised band plans as may be appropriate at that time.

The only band plan adopted so far by the Union itself is as below:

21 000-21 150 MHz — **Telegraphy only**
21 150-21 450 MHz — **Telephony (AM and FM) and**
Telegraphy

This appears, as Rule 8, in the Summary of Miscellaneous Rules (which are still in effect under the new Constitution, pending a review scheduled for the aforementioned Administrative Council meeting).

Region 1

The IARU Region 1 Division has adopted the following band plans:

3 500 - 3 800 MHz	CW
3 580 - 3 620	RTTY
3 620 - 3 800	Phone
	(except 3 730-3 740 MHz)
3 730 - 3 740	SSTV

7 000 - 7 100 MHz	CW
7 035 - 7 040	RTTY and SSTV
7 040 - 7 100	Phone

10 100-10 150 MHz	CW
10 140-10 150	RTTY

14 000-14 350 MHz	CW
14 080-14 100	RTTY
14 100-14 350	Phone
	(except 14 225-14 235 MHz)
14 225-14 235	SSTV

18 068-18 168 MHz	CW
18 100-18 110	RTTY
18 110-18 168	Phone

21 000-21 450 MHz	CW
21 080-21 100	RTTY
21 150-21 450	Phone
	(except 21 335-21 345 MHz)
21 335-21 345	SSTV

24 890-24 990 MHz	CW
24 920-24 930	RTTY
24 930-24 990	Phone

28 000-29 700 MHz	CW
	(except 28 200-28 300 and
	29 300-29 550 MHz)
	RTTY

28 050-28 150	Beacons
28 200-28 300	
28 300-29 700	
	(except 28 675-28 685 and
	29 300-29 550 MHz)
28 675-28 685	SSTV
29 300-29 550	Satellite

Region 2

So far, IARU Region 2 has adopted band plans only for the 10, 18 and 24-MHz bands, which are identical with those of Region 1.

Region 3

Below are the band plans adopted by the ARU, Region 3 Association. Note that RTTY is permitted in the entire 10-MHz band.

10 100-10 150 MHz	CW and RTTY
-------------------	-------------

18 068-18 168 MHz	CW
18 100-18 110	RTTY
18 110-18 168	Phone

24 890-24 990 MHz	CW
24 920-24 930	RTTY
24 930-24 990	Phone

TURKEY AND THAILAND AUTHORISE AMATEUR RADIO

After many years of efforts by Türkiye Radyo Amatörleri Cemiyeti (TRAC) the Turkish government has legalised the amateur service. The first license was issued on 30 January to Dr L. Akba, who is General Secretary of TRAC. His office at call sign is TAA.

TAA is the prefix for Istanbul while the Asian part of the country is divided into seven call areas TA2 through TA8. Privileges are at bands (including the WARC bands), 81 modes up to 400 watts PEP.

During 1984, the Royal Thai Government authorised the use of two call signs by the Radio Amateur Society of Thailand (RAST) on live special occasions. HSOA was operated in the Siam DX European DX, and CO Worldwide Phone Contests, and at the RAST 20th anniversary celebration in November. The other authorisation was granted in July for the operation of HSOJA on behalf of UNICEF. RAST is working towards full recognition and legalisation of amateur radio by the administration.

Congratulations to all those whose persistence made these achievements possible in Turkey and Thailand.

ANNIVERSARIES

1985 is the 60th anniversary year for IARU. In addition, this year marks special anniversaries for many of its member societies, including the WIA's 75th Anniversary.

Three societies celebrate their 60th anniversary. Réseau des Émetteurs Français (REF), South African Radio League (SARL), and Foreningen Svenska Sändareamatörer (SSA).

In conjunction with its annual convention, the French society organised the first Radio Telecom Show in Chateauroux on 25-27 May.

Festivities to mark the 60th anniversary of SARI, centred around its annual general meeting over the first weekend of April.

The Swedish society will issue a 60th anniversary version of the popular operating award it sponsors: WASM-60. Only contacts made during 1985 are valid for this special award.

Two societies were founded in 1945, thus celebrating the 40th anniversary this year. They are VERQV of the Netherlands, and CREN of Nicaragua.

The Korean Amateur League (KARL) held its 30th anniversary ceremony on 28 April. A special station, signing HL30HQ, was QRV from 25 April to 1 May. In addition, the KARL 30th Anniversary Award will be issued to those who have contacted 30HL stations during the first four months of this year. Other societies for whom 1985 is a special year are ARGC of Grenada (30th anniversary), ABARS of Antigua and Barbuda, FRA of Faroe Islands (20th anniversary) and SLARS of Sierra Leone (10th anniversary).

Congratulations to all!

TSUKUBA EXPO ON AIR

The Japan Amateur Radio League (JARL) has

established a special amateur radio station at the Tsukuba Science Expo '85, which is being held in Tsukuba Science City, Ibaraki, Japan, from 17 March to 16 September, 1985. Signing BJ1XPQ, the station is QRV in the 3.5, 7, 14, 21 and 28-MHz bands with a maximum output power of 500 watts. Transmission can be made in CW, SSB, RTTY, FAX and SSTV.

JARL asks amateurs who plan to go to this event to take their amateur radio license, any licensed amateur may operate BJ1XPQ without individual authorisation by the Japanese government.

Further information can be obtained from Japan Amateur Radio League, 1-14-2 Sugamo, Toshima, Tokyo 170, Japan.

UN AT 40 AWARD

On 24 October 1985, the United Nations will celebrate the 40th anniversary of the coming into force of the United Nations Charter signed in San Francisco in 1945. To celebrate this event, and in the spirit of developing friendly relations among nations, the United Nations Staff Recreation Amateur Radio Club is sponsoring the UN at 40 Award.

This award is available to any amateur radio

station (or SWL) that has contacted two of the three amateur radio stations operating with the United Nations prefix, during the United Nations 40th anniversary celebration year from 1 January to 31 December 1985. Contacts can be made on any band or mode. The three stations are 4U1UN at the United Nations Headquarters in New York, USA.

4U1UT at the International Telecommunication General Secretariat in Geneva, Switzerland. 4U1VC at the Vienna International Center in Vienna, Austria.

Applicants must send a list of the stations worked, including date, time, mode, report and band. This list must contain a signed statement vouching for the bona fides of the application. The cost of the award is US\$5.00 or 15 IRCs, of which US\$4.00 will be donated to the United Nations Children's Fund (UNICEF).

The application must be sent before 1 February 1985 to United Nations Staff Recreation Council, Amateur Radio Club, United Nations, Room DC1-0724, PO Box 20, New York NY 10017, USA.

AR SHOWCASE

form or fully assembled and tested, a radio teletype and CW modulator-demodulator which is designed to provide its user with satisfactory performance even under noisy HF operating conditions.

Known as the MDK-17 this radio modem uses a receive line-up that consists of an active 40 dB limiter and bandpass filter followed by a phase locked loop detector. Signal tuning is simplified by the inclusion of three LED indicators — Lock, Mark and Space.

A wide range of shifts, tone frequencies and speeds are accommodated including those used in ASCII, AMTOR, SITOR and ARQ.

The MDK-17 can be interfaced with most of today's popular computers through its TTL level I/O port. Instructions are also included on the addition of RS-232 for those who require it. It additionally provides a direct high voltage current loop I/O for use on mechanical RTTY machines such as the Siemens 100 etc. High isolation between the current loop and the MDK-17's electronics is provided by an opto-coupler.

The MDK-17 kit is priced at \$118 while the MDK-17 fully assembled and tested version is \$181 plus \$14 P&P in both cases.

For more details contact: GFS Electronic Imports, 17 McKeon Road, Mitcham, Vic. 3132. Phone (03) 873 3777.



SIMPLE TERMINATION CLIPS

New guy termination clips are now available from GFS Electronic Imports for their range of Debglass tower guys. Debglass is a high tensile strength, low elongation, non-corrosive, non-conductive guy wire substitute. Its extremely high strength, to cross section ratio is brought about by

the use of a continuous filament fibreglass core sheathed in UV stabilised PVC. Four millimetre DB-4 has a tensile strength of 430 kg while 5 mm DB-5 is rated at 560 kg tensile strength.

Up until recently standard termination procedures for Debglass included the use of thimbles and "D" clamps. The new Debglass offers an alternative to this which saves the installer quite a deal of time, particularly on a large installation.

Attachment of a Debglass guy to a Debglass simply involves knotting the end of the guy, inserting it into the clip then screwing on its cover.

For further information contact: The Australian distributors, GFS Electronic Imports, 17 McKeon Road, Mitcham, Vic. 3132. Phone (03) 873 3777.

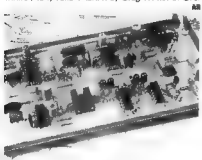
AUSTRALIA'S FIRST ICOM DAY

ICOM Day, the first of its kind held in Australia, is being hailed as an unqualified success according to spokesmen from parties sponsoring it, Icom Australia and GFS Electronic Imports.

It was held on Sunday 14th April at GFS Electronic Imports' premises. An extremely bad electrical storm held off, fortunately, until the show was over. Both a range of Icom products as well as others handled by GFS were on display including a new range of Japanese antennas from Sagami Antenna Co.

Visitors to Icom Day were also given a live demonstration of Satellite TV which included programmes direct from the USA, Perth and Brisbane. It was also hoped that three new Icom products would make their debut on the day but due to Murphy, as well as some production delays, this didn't eventuate. Icom express their apologies to those who came especially to view these.

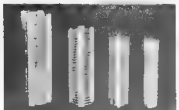
The IC-2A door prize, offered by Icom Australia, can be seen in the photo being presented to the winner, Tony Falk V3XFK by Greg Whiter of GFS.



RTTY/CW MOD-DEMOD

GFS Electronic Imports have available, in kit

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1-16	1/8"	16	3"	No 3003	\$1.60
2-08	1/8"	8	3"	No 3006	\$1.90
2-16	1/8"	16	3"	No 3007	\$1.90
3-08	1/8"	8	3"	No 3010	\$2.30
3-16	1/8"	16	3"	No 3011	\$2.30
4-08	1"	8	3"	No 3014	\$2.60
4-16	1"	16	3"	No 3015	\$2.60
5-08	1 1/4"	8	4"	No 3018	\$2.90
5-16	1 1/4"	16	4"	No 3019	\$2.90
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8-10/7	2"	10	7"	No 3907	\$7.20

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HOME-BREW REGULATED POWER SUPPLY

Des Greenham. VK3CO

16 Clydesdale Court, Moorooka, Vic 3629

Some time ago an article on this subject was published by the author resulting in a surprising response by amateurs from all around Australia who were keen to "home brew" a power supply that would operate a 25 watt 2 metre FM unit and at the same time, keep down the cost to an absolute minimum. The unit to be described is basically the same as the previous article except that the overall cost has been further reduced by utilising some less expensive components.



The supply to be described has an output of 13.8V adjustable, with an output capability of 10 amps, more than enough to drive the average 25 watt transceiver.

The actual layout and construction details are left to the constructor as they are not critical. The heart of any power supply is the transformer. A commercial unit, with the necessary capacity, is a costly item to buy. In this case, the transformer to be used is one recovered from an old black and white television, many of which are resting as junk in shacks, sheds and elsewhere.

The transformer is partly dismantled and the old secondary removed and replaced with a new 19 volt winding. This operation is not difficult but takes a little time and patience.

The 19 volt winding is fed into a conventional rectifier bridge of 30 amps capacity, and the Dc output is then controlled by a CA78MC regulator and a pair of 2N3055 power transistors which are mounted on a heavy heat sink. This can either be a commercial fin type or a very heavy piece of aluminium or copper D section material. The heat sink is best mounted outside the case to allow better ventilation and heat dissipation.

Generally, components these days are most reliable. However, should one of the regulating transistors develop an internal short circuit from collector to emitter the output voltage would immediately jump to a dangerous value, around 25 volts, causing instant damage to valuable equipment. Most equipment can operate up to 15 volts before damage occurs. It is desirable therefore to protect the equipment from anything above 15 volts.

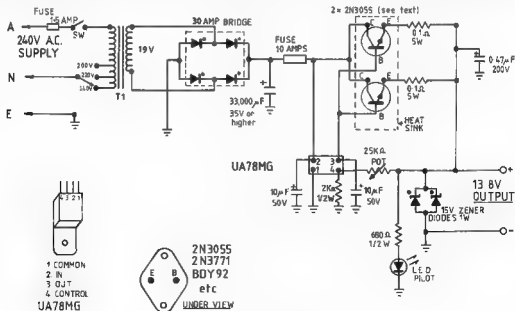
Many commercial suppliers have sophisticated and naturally expensive protection systems one being the crowbar. In this type when the output exceeds 15 volts a Zener diode conducts and fires an SCR which in turn short circuits the output and operates a fuse. In this supply to keep costs down we have fitted two Zener diodes (15 volt) across the output. In the event of some internal fault developing causing an increase in output voltage, the Zener diodes conduct and short the output thus protecting the equipment. The current carried by the Zener diodes far exceeds their normal rating and they immediately burn up. When a Zener diode is destroyed it invariably becomes short circuit and consequently operates

the fuse, switching off the supply and completely isolating the equipment. The only cost of repair would be the faulty regulating transistor and the replacement of two well-cooked Zener diodes worth only a few cents. However, this is a remote risk and may never happen. It is reassuring however to know there is some form of over-voltage protection when using the supply on valuable equipment.

CONSTRUCTION DETAILS

The TV power transformer should be carefully examined for any damage. It should be removed from the chassis not to mark the 240, 220, 210 volt primary input winding connections. The secondary heater winding is usually 6.3 volts. This winding is obvious because it is wound with heavy gauge wire. After removal, connect the primary to the 240 volt mains supply and check the secondary heater winding with a multi-meter (AC volts) to ascertain if it is 6.3 or 12.6 volts.

After checking carefully the back the primary connections to avoid breaking the wires. The transformer should now be dismantled by firstly removing the four bolts holding the armatures and frame together. After removal of frame and



Power Supply and 13.8V Regulated Output

clamps the first lam nation should be removed. This is the most difficult part of the entire project as these are usually pressed in by machine and difficult to remove. A thin bladed screwdriver driven in between laminations can frequently enable one lam nation to be gripped by long nosed pliers and removed. The laminations are usually in a "E" and "I" shape configuration and should be completely removed and stacked.

The heater winding is on the outside of the winding and this should now be carefully unwound making sure to count the turns as they are removed. When this winding has been removed and the number of turns noted the remaining secondary winding can be stripped either by unwinding or careful use of a hacksaw. This is because the primary winding underneath is to be reused. Some transformers from Astor and AWA sets have a double bobbin winding with primary on one side and secondary on the other. These are particularly easy to rewind. The more usual type have the primary against the core then the high voltage secondary and finally the heater winding on the outside.

Having now stripped the bobbin down to its basic primary winding we must now calculate the turns ratio of the transformer. The turns per volt figure is found by dividing the turns counted by the heater winding voltage. This is nominally 6.3 or 12.6 volts however most manufacturers wind transformers for 6.3 or 13 volts to allow for a voltage drop. It is common to find that the 12.6 volt winding has thirty nine turns. The turns per volt figure would be $\frac{39}{12.6} = 3$.

This means we need three turns on the secondary for each volt of secondary output. In our case we need 19 volts, therefore we would need $3 \times 19 = 57$ turns. This is only an example and you must calculate for your particular transformer to obtain 19 volts output.

To rewind the secondary we need wire that will supply 10 amps without overheating. 14 Gauge

B & S is adequate and can be purchased from retailers or automotive electricians. A length of 10 metres should be enough for an average transformer. The winding is wound on carefully layer by layer. It can be a jumble wound if there is enough space.

The turns must be carefully counted on and when the winding is completed a layer of PVC tape wound around the winding. The ends should be covered with spaghetti (plastic tubing) and extended out in a similar way to the original heater winding. Now the core should be replaced by fitting the laminations back into the bobbin. If the laminations are the E and I type it is easier to fit three E sections at a time alternating the direction. The I pieces can be fitted later.

It is part of Murphy's Law that all the laminations removed will never be replaced so do your best. The last few will be difficult to fit and careful use of a small hammer will assist. The assembly should be tapped into square shape with the hammer and the four bolts and mounting plates fitted. When finally together, and looking like original, connect 240V AC to the primary and check the secondary voltage. If your calculations have been correct and all care taken your meter will read 19 volts. If your reading is NOT EXACTLY 19 volts you can adjust by changing the primary tapping. By connecting 240volts mains to the 250 volts tapping, the output will be dropped and similarly connecting to the 230 volts tapping will increase the output.

The general assembly of the power supply will be left to the constructor. The transformer should be well mounted and all bolts tightened to prevent buzz. The regulator can be mounted in any position and does not require any heat sink. It can be mounted on a small piece of aluminum formed into a bracket. It is important that the bypass capacitors be mounted directly on the regulator itself and not wired away. The output fuse should be rated only marginally higher than the maximum load expected. To operate a set such as an IC225 a fuse rating of 5 amps would

be adequate. The main filter capacitor shown as 33,000 mfd is from a disposal computer power supply and is readily available.

Any value larger than 25,000 mfd would be acceptable and this could be made up from several smaller capacitors wired in parallel. An example could be five capacitors, each 5000 mfd, wired in parallel. Be sure the voltage rating is adequate. Any rating higher than 30 volts working is sufficient.

Whilst 2N3055 power transistors are specified other similar types can be used provided they are NPN construction. Many are available on the disposal market at a very reasonable price. Equivalents that have been tested and found to be suitable are BDY-92 and 2N-3771.

CONSTRUCTION — GENERAL

After completion of wiring and circuit check, remove one side of the Zener diodes before switching on in case the output voltage is high. Connect an accurate DC voltmeter across the output and switch on. If everything is correct, output will be seen. This can be carefully adjusted with the control potentiometer to 13.8 volts — the LED will be glowing. Switch off, and reconnect the protection Zener diodes. Your supply is now ready for use. Connect a transceiver and check with another station for any noise or hum. The supply is clean and hum free and exhibits good regulation. The voltage drop when transmitting is barely discernable.

With the values shown, and a good transformer, a regulated output in excess of 10 amps will be obtained with a minimum dent in the domestic budget.

Technical Editors Note

Constructors of projects such as this should pay particular attention to component ratings. The output load, environment, and duty cycle may well require special consideration. This is of particular concern as the output capabilities increase. Heat sink requirements and power transistor ratings should be carefully considered.

SPURIOUS TRANSMISSION CHECKER

Bruce Hannaford VK5XI

57 Haydown Road, Elizabeth Grove, SA 5112

This checker is so simple and so useful that it is difficult to understand why it is not already in use in most amateurs' shacks. I originally developed it for RTTY but it is also useful for SSB and CW. Looking at the circuit of the unit you could be excused for thinking how on earth that simple thing can do any useful checking of any kind whatsoever?

For HF bands FSK RTTY a clean carrier (even one changing in frequency) will produce no audio output apart from slight key clicks of about the same level as good CW. However if spurious keying or modulation outputs are present these are then heard as audio tones or "squawks" of some sort. With HF band FSK RTTY generated by audio tones into a SSB transmitter it will normally be found low levels of audio input produce no audio signals from the checker but as the input level is increased a setting will be found where spurious tones or squawks are heard, needless to say you then operate at a somewhat lower setting or find out what is wrong. This checker is very useful indeed for RTTY generated in this manner, as soon as you do the wrong thing or something goes wrong you get an audible warning from the checker speaker.

With SSB, the modulation will be heard in the headphones but be barely understandable, if there are no spurious modulation signals present the modulation will have a "smooth" sound but with spurious signal outputs this will become rough and harsh sounding. Using a dummy antenna, try overriding the transceiver and note the change of sound that occurs when spurious outputs are being generated.

Fortunately almost all spurious outputs of a modulation distortion or key clicking nature produce beats that will give rise to audio being heard in the checker, once an operator gets used to using the checker and what sounds to expect from it no more bad transmissions of spurious modulation signals should occur.

From the circuit of the unit it will be clear if it is coupled to a properly functioning transmitter nothing will be heard unless amplitude modulation is taking place. The coupling to the transmitter is done by a short length of insulated wire from the checker antenna

terminal wrapped around or taped to the coaxial feeder near the transceiver. Use enough wire to get good coupling so reasonably loud modulation can be heard when transmitting SSB. Check the coupling is sufficient for all bands you use. Normally the speaker will be used for CW and RTTY and the phones for SSB.

Firstly checking for CW problems, keying will modulate the carrier and the level of key clicks compared to the SSB level of a normal SSB transmission will tell if you have key click problems. Usually the clicks will be quite faint and more of a thump than a click. Also if the carrier is not clean and some hum, etc is present this will be easily heard. If any audio tones or squawking sounds are heard you have big problems and these are probably due to RF feedback oscillations.

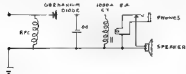


Figure 1

This comet will have passed the earth's orbit only 29 days before we arrive at that point in space, so there should be a substantial quantity of particles still around when we get there. That should mean lots of meteors. Mike warns, however, that the peak of this shower will last only an hour or so, and will probably occur about 1800UTC, favouring northwest-southeast paths. Eleven days later, on 20 October, particles accompanying Haley's comet should produce the Orionids shower. WSP notes that this close proximity of new comets provides a similar situation to that which made the 1966 Leonids shower so spectacular, with over 150,000 meteors per hour.

"This may be an M5 year we will long remember. It should not only be a great sport for experienced piling skyways, but also serve as an ideal opportunity for newcomers to get their feet wet in this fascinating and productive propagation mode."

Those of you who intend giving the M5 mode a try this year could have an interesting time. Why not share your experiences with others by letting me know in a letter for use in this column.

EME ANNALS

The other item of interest from "QST" is headed "EME ANNALS" and shows for each of the bands being used for EME work the number of different stations (not total QSOs) worked and the number of countries contacted.

6 metres: List headed by KSWVX with two stations and one country, others with the same score include WASHNK, WBNMNT and VP2EME. 2 metres: K1WHS 552 stations, 61 countries and also WAC. Then V2BQC, WA1XJN 544, 45 countries, SM7BAE 308 85 WAC. Incidentally, on 6 metres there are 7 call signs listed, and on 2 metres 120 and the list is not complete. On 220 MHz: K5FF 33 stations, 4 countries. W1JR 28 and 3, W5FF 25 and 3. On 432 MHz: K2UYH 298 stations in 41 countries, and WAC, C1K8K 225 35, 6M5H 200 37 WAC, W1JR 171 31, K3NSB 197 20 WAC. There are 64 call signs listed, 1296 MHz: K2UYH 48 20, OE6XXI 46 —, G3TFL 35 18, with 24 call signs. On 2304 MHz: W4HHK 2 1, W4AHGN 2 2, DF0EME 2 2, W3GKP 1 1 and OE9OXI 1 1, and those five make up the total list.

EME BEGINNINGS

Also from "QST" this is how the EME scene emerged:

27 January, 1953: first amateur reception of echoes from the moon — W4AO and W3GKP on 144 MHz.

27 July, 1960: first amateur two-way contact via the moon — W1BU and W8HS on 1296 MHz.

11 April, 1964: first 144 MHz moonbounce two-way contact — W6DNG to OH1NL.

20 May, 1964: first 432 MHz two-way moonbounce contact — W1BU and KP4BPZ (followed shortly by a number of other contacts from KP4BPZ using the 305 metres (1000 feet) dish at Arecibo, Puerto Rico).

15 March, 1970: first 220 MHz two-way moonbounce contact — W6BNTM and W7CNK followed by a contact next day between W6BNTM and K2CBA.

19 October, 1970: first 2304 MHz two-way moonbounce contact — W3GKP and W4HHK.

30 July, 1972: first 50 MHz two-way moonbounce contact — K6WVX (now K5CM) in conjunction with WSWAX (now K5SW), and WASHNK in conjunction with W55XD.

It is always interesting to read about or again remind us who the pioneers were in establishing, what is substantially commonplace today, EME contacts. They still do not come easily, and require a lot of preparatory work and dedication to achieve, so it will never be for the faint-hearted, but obviously the rewards are there for those who make it.

CLOSURE

These notes are being prepared a week in advance of the usual date as I am due to have a period in hospital for an operation on my back for a problem which has been affecting my walking.

Any letters which arrive from now on will have to be included next month unless I am back home within a week in which case I might be able to make the deadline. However, in the meantime, all the best with the winter time DX which you should be experiencing as you read these columns.

Closing with the thought for the month: "If you don't get everything you want, think of the things you don't get that you don't want." '73 The Voice in the Hills.

Don't miss the VHF/UHF Story of Fires from VK8 — August AR.

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AMSAT AUSTRALIA

Colin Hurst VK5HI

8 Arndell Road, Salisbury Park, SA 5109

NATIONAL CO-ORDINATOR

Graham Raitch VK5AGR

INFORMATION NETS

AMSAT AUSTRALIA

Control VK5AGR

Amateur Chack 0845 UTC Sunday

Bulletin Commences 1000 UTC

Winter 3.665 MHz Summer 7.084 MHz

KISAT PACIFICS

Control JA1ANG

1100 UTC Sunday

14 305 MHz

AMSAT SW PACIFIC

2200 UTC Saturday

21 28028.878 MHz

Participating stations and listeners are able to obtain basic orbital data using Keplerian elements from the AMSAT Australia net. The information is also included in some VFA Divisional broadcasts.

ACKNOWLEDGEMENTS

Contributions this month are from Bob VK3ZBB and UoSat OSCAR 9 Bulletin 126.

AMSAT-AUSTRALIA NEWSLETTER

Graham VK5AGR the National Co-ordinator of AMSAT-Australia is now producing a monthly newsletter containing updated satellite news, orbital predictions, Keplerian data and operating hints and techniques. The objective of the newsletter is to keep the amateur populace informed on the latest information available and to raise funds for the funding of projects or the purchase of an item of hardware for a future amateur satellite project, eg Phase-3C, Phase 4 or whatever. The cost of the Newsletter is \$15 and cheques made payable to VFA (SA Division) should be forwarded to Graham VK5AGR QTHR.

The following news items are direct from the UoSat Bulletin 126 17th May 1985.

ANNIVERSARY

Tuesday 14th May last week saw the anniversary of the successful recovery of the UoSat-2 spacecraft following the communications problems experienced just after launch on 1st March 1984. UoSat dedicated 14th May to the memory of Finn Stoltzberg OX3F9, who assisted in the recovery and who was, sadly, killed shortly after.

MILESTONE

UoSat-OSCAR-9 passed the 20,000 orbit mark on Tuesday 14th May — obviously an auspicious date!

PACSAT

VITA has received some 'start-up' funds from the Hoover Foundation to initiate a major fund-raising activity to support the PACSAT mission. \$30,000 has been made available to employ the services of a fund-raising group — TAFT.

JAS-1

The April 1985 (No 4) issue of the Japanese "CQ Ham Radio" journal has some details of the user interface for the JAS-1 satellite, including a sample message using the digital communications system on the spacecraft.

UoSat-OSCAR-11 OPERATIONS

Spacecraft engineering data surveys and 2400/4800/9800 BPS AFSK transmission tests on 435MHz have continued this week — with good result at 4800 BPS.

The spacecraft has been allowed to spin-up to a 2-spin period of 47 seconds and modified magnetorquing algorithms generated by Stephen Hodgart are being assessed which should, hopefully minimise the introduction of unwanted libration during these manoeuvres. The de-spin manoeuvres have been taking place in range of UoSat so that their effect can be monitored closely.

However, this generally means that the orientation of the spacecraft to the local geomagnetic field vector is not optimum for such manoeuvres and, as was seen last November, some unwanted component torques are also generated. These undesirable torque components have maximum effect when the spacecraft is spinning at very slow rates and tend to introduce excessive libration — sometimes going so far as to push the spacecraft over and out of lock! The long-term solution is to execute these manoeuvres, using the OBC, when the spacecraft and geomagnetic field vector are optimally aligned — probably out of range of UoSat. This will complicate the data collection slightly and requires some further OBC software development but should effect the attitude control manoeuvres with minimal risk of increasing libration and losing go-lock.

Revised software has been uploaded into the DCE this week by NKKK with a test message sequence. A greater amount of 145MHz downlink time is now scheduled for the DCE.

The telemetry clock on UO-11 has been reset twice since launch and appears occasionally to 'glitch'. We are not sure at present why this occurs, but it is under investigation. We intend to reset the clock once more soon.

INFORMATION FOR 'NEWCOMER'

In recent weeks I have received a number of letters from newcomers to the amateur satellite ranks enquiring about information and literature pertaining to satellite activity.

As a reference text the following publication is highly recommended, and is priced at about \$18 through the WIA.

'The Satellite Experimenter's Handbook'

by Martin Davidoff K2UBC

Published by The American Radio Relay League. This publication may be available through your WIA Divisional Office if not contact AMSAT-Australia.

The following organisations also provide literature and information specifically for the amateur satellite communicator. With the value of the Australian dollar depreciating against overseas currencies, subscription rates for the below mentioned groups may not seem as attractive as in recent years. Therefore if your funds are limited I suggest to you the AMSAT-Australia Newsletter mentioned previously in this column as the first priority with membership of AMSAT-UK being the second priority. Membership of AMSAT-UK provides an excellent publication called OSCAR News at least quarterly, with special editions for specific events and launches.

1. AMSAT membership

Those persons wishing to join AMSAT, The Radio Amateur Satellite Corporation based in Washington USA (the parent body of the amateur satellite service) are requested to direct their enquiries to: AMSAT PO Box 27

Washington DC 20044

Various categories of membership are available as well as services. These items will be detailed upon receipt of your enquiry.

2. Amateur Satellite Report

This is a bi-weekly newsletter published on behalf of AMSAT. It is mailed first class to all subscribers (AIR MAIL to Overseas). ASR is the update of all satellite activities and events worldwide.

3. AMSAT-UK Membership

The English affiliate of AMSAT, AMSAT-UK wishes to advise all intending new members that the correct procedure to join AMSAT-UK is to first write to:

Ron Broadbent G3AAJ

Non Secretary AMSAT-UK

94 Herongate Road

Wanstead Park

London E72 5EQ

requesting a membership application form and the current subscription rate.

COMPUTER PROGRAMMES

To assist the calculation of the various satellite orbits there are now a number of versions of the Tom Clark W3WV, ORBIT Programme, available to suit various home computers. If you are personally interested in a suitable programme contact Graham VK5AGR, QTHR supplying a SASE for details.

CURRENT OPERATIONAL SATELLITES

As at the 1st May 1985 the following satellites were still fully operational: Oscar 9, Oscar 10 and Oscar 11.

The following satellites are unfortunately erratic in operation due to their failing batteries: RS5, RS7 and RS8. In respect to the RS Series I will attempt to get a schedule of operational times for inclusion in the next issue.

UPS AND DOWNS

From Bob VK3ZBB we have the latest listings of launches and re-entries.

FROM BOB VK3ZBB

Consideration is being given to the provision of a Transponder operating in the amateur 'S' Band which is 2300 to 2450 MHz. It is suggested that the transponder will be installed in the Phase 3C amateur satellite which should fly in 1985-7.

Obviously potential users of this 'S' Mode will require some experience in the design and development of suitable equipment and it is perhaps fortunate that the USSR is understood to have two satellites operating beacons in this shared frequency band.

Although no details of transmission times etc are yet available the Keplerian Elements for the two satellites have been obtained and, hopefully, will be updated from time to time. These figures will enable amateurs to determine the location of the satellites in the sky and to listen for the beacons on their reported frequency of 2304 MHz.

The Keplerian Elements are:

SATELLITE: Cosmos 1847

Element 34-033A 16884

Element Set: 889

EPOCH	86-103
EPOCH DESCEND	0.94028977
1st Deriv of Motion	-0.0001028 RPM
Inclination	83.1727 deg
Right Ascension	114.9866 deg
Eccentricity	0.1575046
Argument of Perigee	318.9626 deg
Mean Anomaly	6.0863 deg
Mean Motion	2.00574 RPD
Orbit Number	753

SATELLITE: Cosmos 1848

Element Set: 16888

Element Set: 891

EPOCH	86-101
EPOCH DESCEND	0.73713789
1st Deriv of Motion	-0.0001228 RPM
Inclination	82.8725 deg
Right Ascension	232.9319 deg
Eccentricity	0.1789028
Argument of Perigee	318.2942 deg
Mean Anomaly	4.8668 deg
Mean Motion	2.005231 RPD
Orbit Number	380

HANADS

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SATELLITE ACTIVITY FOR PERIOD 1-28 FEBRUARY 1985

OSCAR 10 APOGEES FOR JULY-AUGUST 1985

DAY	ORBIT	APOGEE #	U.T.C #	TIME, SS	SATELLITE CO-ORDINATES LAT LON DEG DEG	J-----NEAR HEADINGS-----J							
						SYDNEY		ADELAIDE		PERTH		EL	
						AZ DEG	EL DEG	AZ DEG	EL DEG	AZ DEG	EL DEG	AZ DEG	EL DEG
1st July													
1st July	102152	103112	-11	249	292	40	307	50	347	45			
2nd July													
2nd July	1031545	1032110	-11	240	302	48	321	56	12	45			
3rd July													
3rd July	1041542	1051116	-11	230	314	55	339	61	34	61			
4th July													
4th July	1051549	1010117	-11	221	301	60	1	62	51	55			
5th July													
5th July	1061551	1729120	-11	212	353	63	23	60	63	48			
6th July													
6th July	1071553	1646121	-11	202	16	63	41	56	71	39			
7th July													
7th July	1081555	1607123	-11	193	37	69	55	49	78	31			
8th July													
8th July	1091557	1026122	-11	183	52	52	45	42	84	23			
9th July													
9th July	1101559	1445126	-12	174	68	40	78	34	90	14			
10th July													
10th July	1111561	1404129	-12	165	72	37	80	26	95	6			
11th July													
11th July	1121563	1323130	-12	155	79	29	84	18	99	-2			
12th July													
12th July	1131564	1030131	-12	145	101	01	10	262	0				
13th July													
13th July	1141567	1242132	-12	144	85	21	92	10	262	0			
14th July													
14th July	1151568	0032104	-12	131					266	8			
15th July													
15th July	1161567	1201134	-12	132	90	13	97	2	271	17			
16th July													
16th July	1171568	2341108	-12	121					-2	271	17		
17th July													
17th July	1181567	1120136	-12	127	94	8			265	5	276	25	
18th July													
18th July	1191570	2300107	-12	803					5	276	25		
19th July													
19th July	1201571	1039137	-12	118	101	-3							
20th July													
20th July	1211572	2219109	-12	893	263	3	270	18	282	34			
21st July													
21st July	1221574	2138110	-12	284	246	11	275	21	289	42			
22nd July													
22nd July	1231576	2059113	-12	274	273	19	281	30	298	50			
23rd July													
23rd July	1241578	2016114	-12	265	229	37	289	38	311	56			
24th July													
24th July	1251580	1795116	-12	256	295	35	297	46	329	64			
25th July													
25th July	1261582	1856118	-12	246	293	44	308	58	354	67			
26th July													
26th July	1271584	1813120	-12	237	303	51	329	60	41	66			
27th July													
27th July	1281586	1732122	-12	228	314	56	344	66	42	61			
28th July													
28th July	1291588	1681124	-12	218	326	64	8	44	57	55			
29th July													
29th July	1301590	1610126	-12	209	360	66	31	61	68	47			
30th July													
30th July	1311592	1539128	-12	199	35	64	48	56	76	38			
31st July													
31st July	1321594	1448129	-12	190	46	69	61	49	82	30			
1st August													
1st August	1331596	1407132	-12	181	56	52	70	41	88	21			
2nd August													
2nd August	1341598	1326133	-14	171	68	38	78	38	93	19			
3rd August													
3rd August	1351600	1245136	-14	162	76	36	84	25	98	5			
4th August													
4th August	1361602	1204137	-14	153	83	28	90	17	103	-9			
5th August													
5th August	1371603	2346108	-14	143					261	4			
6th August													
6th August	1381604	1123138	-14	143	88	20	95	9	266	12			
7th August													
7th August	1391608	2303109	-14	1319									
8th August													
8th August	1401610	1042141	-14	124	94	11	100	1	271	20			
9th August													
9th August	1411607	2323112	-14	309			260	3					
10th August													
10th August	1421608	1001142	-14	388	99	4							
11th August													
11th August	1431609	2141113	-14	388	258	-2	265	9	276	29			
12th August													
12th August	1441611	2100116	-14	290	263	8	270	17	282	37			
13th August													
13th August	1451613	2019117	-14	281	269	14	278	25	289	46			
14th August													
14th August	1461615	1938120	-14	272	273	22	281	33	299	54			
15th August													
15th August	1471617	1859121	-14	262	278	31	289	41	312	62			
16th August													
16th August	1481619	1816123	-15	253	285	39	298	50	333	67			
17th August													
17th August	1491621	1735125	-15	244	293	47	310	57	2	70			
18th August													
18th August	1501623	1654126	-15	234	304	55	327	63	30	67			
19th August													
19th August	1511625	1613129	-15	228	319	62	351	66	30	61			
20th August													
20th August	1521627	1532130	-15	215	341	67	17	66	64	54			
21st August													
21st August	1531629	1481132	-15	206	8	68	89	62	73	45			
22nd August													
22nd August	1541631	1451134	-15	197	33	64	95	65	80	37			
23rd August													
23rd August	1551633	1329136	-15	187	51	58	66	48	86	28			
24th August													
24th August	1561635	1248138	-15	178	64	51	75	40	91	20			

Number	Name	Station	Date of Launch	Period of Mission	Apogee	Perigee	Altitude	Velocity
1985-01A	OSCAR 10	OSCAR	Mar 1	89 - 100	283	306	7	7
1985-01B	OSCAR 10	OSCAR	Mar 6	97 - 100	283	306	7	7
1985-01C	OSCAR 10	OSCAR	Mar 13	100 - 100	283	306	7	7
1985-01D	OSCAR 10	OSCAR	Mar 14	100 - 100	283	306	7	7
1985-01E	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01F	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01G	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01H	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01I	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01J	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01K	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01L	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01M	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01N	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01O	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01P	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01Q	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01R	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01S	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01T	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01U	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01V	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01W	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01X	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01Y	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7
1985-01Z	OSCAR 10	OSCAR	Mar 21	100 - 100	283	306	7	7

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Special 75th Anniversary
Victorian Division - VK's
Feature



VICTORIA 150
CELEBRATING 150 YEARS OF VICTORIA



Jim Linton VK3PC

4 Ansett Crescent, Forest Hill, Vic. 3131

VICTORIA: PREMIER DIVISION

This 75th anniversary gives us a chance to look back on the achievements of pioneers and reflect on what the future may hold. One thing that must be stated early is that much of our history remains unrecorded.

The date 30 November 1911, is accepted as when a public meeting was convened by P H McElroy to form an "Amateur Wireless Society of Victoria" (Reference "The Argus" newspaper 1.12.1911).

However there's some doubt as to whether a prior organisation existed and the 1911 meeting was to both form an Amateur Wireless Society and amalgamate an existing body of wireless experimenters.

It would be desirable if someone could shine some light on this mystery.

There's no doubt about the role Victoria has played, and continues to play in the affairs of our hobby, and developments in the science of wireless.

In the late 1880s George William Selby of Malvern, Vic was experimenting with radio waves, and progressed to wireless telegraphy.

The turn of the century saw an increase in wireless experimentation.

H W Jenvey at Queenscliff, Vic, in 1901 made wireless telegraphy contact with HMS St George, the escort cruiser for a state visit by the Duke and Duchess of Cornwall.

In 1910, G A Taylor of Vic successfully demonstrated that pictures could be sent by wireless.

Exploring further the use of wireless, in 1911 he conducted the first communications between moving trains in Australia, in 1912 was the first to fly a model airship by remote control, and 1913 saw him being the first to fire a gun by wireless.

The immediate post-World War 1 era was a period of great improvements in the science of wireless.

Playing a key role in reviving the Institute after the war was Victor Nightingall.

Australia retained its leading status in experimentation with history making contact to the United Kingdom and the USA.

Max Howden VK3BQ is forever associated

with the startling developments of world-wide communication in the 1920s. His exploits have been well covered in a previous historical article.

Others from Victoria involved in this era include Ross Hull and Howard Kingsley Love. This pair had dominant roles in the Institute, being jointly involved in early publications about wireless (Reference AR August 1970).

The Victorian Division in 1921 began transmitting in telephony news bulletins nightly on 200 metres.

HK Love, President of the Victorian Division, heard transmission from high powered US commercial stations in December 1922.

Being convinced amateur stations on the Pacific coast of the US might be heard he proposed and organised Trans-Pacific tests.

He was appointed head of a special committee to organise the tests (Reference AR October 1983).

Winner of the tests was Max Howden who was congratulated by the whole radio fraternity. The following period saw broadcasting start, and a growing interest in the medium of wireless.

Moving ahead to 1933, the publications era of the division began as a result of the President, Harry Kinnear, suggesting the printing of a magazine. This key figure in Institute affairs was also the founding editor.

Up until February 1972, the division produced the magazine before handing it over to the Federal Officer due to the financial burden it put on the division.

AR magazine was maintained during World War 2 and sent to radio amateurs serving their country.

The full story about AR magazine can be read in an article entitled "Golden Jubilee" in AR October, 1983.

It is probably timely at this point to mention

that the "Premier Division of The Commonwealth" title came to light during interviews with Harry Kinnear and the 1935-41 President, Bill Gronow.

Victoria led the way up until WW2 and forged ahead in the post war years.

The business sense of Kinnear and Gronow was used to benefit the division in the area of war surplus disposals equipment.

This brief history of the division merely attempts to cover the first 50 or so years.

It does not adequately cover the parts played by Victor Nightingall or H K Love.

The formation and activities of the Wireless Reserve is another omission.

There were of course other events and personalities which could have been mentioned — for instance the Exhibitions in Melbourne, 1948, 1949 and 1950.

These public displays of amateur radio will hopefully be written up during the WIA 75th Year.

The remaining 25 years of history is well overdue to be recorded in an article.

Those involved in this period are more qualified to accurately put together a record of events and complete the division's history.

By deliberate action good records of events in the years 1983-85 exist within the Victorian Division Council minutes and AR magazine.

FURTHER READING

An article "A Bit of Victorian History" written by John Adcock VK3ACA, the Victorian Historical Officer, was published in AR magazine in December 1980.

This records the founding of the Amateur Wireless Society of Victoria, which later changed its name to the Wireless Institute of Australia.

It uses a tape recording of a Vic Div General Meeting in December 1979, which was attended by two founding fathers: They were W K Witt and T F O'Shannessy, both who had been at the 1911 foundation meeting.



GEORGE WILLIAM SELBY: AN EARLY WIRELESS PIONEER



His activities and considerable achievements are clearly remembered by Mr Selby's youngest son, 93-year-old Alexander (Dick) Selby. A remark by him last November at a Bird Observers' Club meeting in Echuca about his father experimenting with wireless at the same time as Marconi was overheard by a WIA shortwave listener. The lead was given to the WIA which tracked him down living with his niece, Jenny Johnson at Gunbower.

Mr Selby has been deaf from an early age, but through letters and other material has supplied all of the information for this story.

G W Selby became interested in electricity when he read an article in "Every Boy's Annual" in 1872, which told how to make a galvanic battery. He was about thirteen at the time, and when sent to England the following year to complete his education, he managed to continue experimenting.

However G W Selby's father had little belief in electricity and sent a letter to the English school master, asking him not to encourage George in electrical matters, as it may be many years before anyone could make a living out of it. But the master presented the letter to George as he graduated from the school.

Mr Selby had returned to Melbourne and was working as a clerk when news was received that Alexander Graham Bell had invented the telephone. He was inspired and soon after built a telephone himself. Mr Selby then established his own business in Queen Street, Melbourne, as an electrical engineer, with accountancy on the side.

His interest in experimental activities gravitated to wireless telegraphy, and to increase his knowledge of this then practically unknown science, taught himself French and German so he could read foreign technical papers. His experiments were developed to the extent of enabling him to transmit radio waves through a solid wall.

This was in the late 1880s and claimed to have been the first controlled radio waves in Australia.

In 1896, he sent a wireless telegraphy message from Brighton to Caulfield (Victoria), and continued these experiments until at least 1900. His assistant in that particular experiment was a Calder Oliver of Brighton, believed to have been involved because of his Morse code knowledge — nothing more is known about him.

Mr Selby had a seven acre block of land on the corner of Alma Road and Kharntown Street,

and that was where he transmitted from. He also pioneered the manufacture of X-ray equipment, and owned and operated one of the first X-ray units in Melbourne. The equipment he couldn't buy, he made himself, including the blowing of glass tubes.

In 1896 his equipment was used to locate a bullet in a man's jaw. The medical profession, including the British Medical Association (renamed the Australian Medical Association) was eager to learn about X-rays and turned to Mr Selby for help.

G W Selby also gave his name to the Dandenong Ranges township of Selby, as he was a first councillor for the Shire of Femtree Gully.

Among his life's achievements include 59 years continuous service as auditor for BHP, with his retirement being in December 1945.

Should any reader have further information on Mr Selby, please pass it on to Jim Linton VK3PC, who's still researching historical details.

APPARATUS DESIGNED BY G W SELBY IN THE ARGUS 29/4/1899

The sending apparatus is a Hertz oscillator, comprising two brass balls or spheres and a powerful battery and induction coil.

While the transmitter theory is easy to understand — radiation from the spark gap directly led to a wire antenna — receiving needs a little explanation.

G W Selby in The Argus article, later reproduced in The Radio Experimenter, 15 February 1924, said "The Coherer is an extremely sensitive detector of the kind of electric waves discovered by Hertz."

"This instrument consists of a few metal filings contained in a gap between two pieces of metal, called the pole pieces, which have connected to them longer or shorter collecting wires, and which are respectively joined to the two terminals

of a Leclanché cell or a electric-bell battery.

"The sensitivity of this arrangement to electric waves or, erks, is extraordinary, and the instrument works in this way.

"So long as no waves reach the filings the circuit is practically open and no current passes across the gap, but the instant the waves arrive the filings become a conductor and a low the current from the single cell to flow.

"It is, in fact, a kind of electric-bell push or telegraph key worked by invisible waves instead of by a human finger."

The early descriptive diagrams

He said many experimenters in different countries worked at improving and suggesting improvements to the apparatus.

Among those to be specially mentioned are Drs Lodge and Jackson in England, Professor Bose, in Calcutta, Nicola Tesla in America, Popoff in Russia, Righi and Marconi in Italy and England. "I can lay claim to being a fellow-worker in Melbourne," said Mr Selby.

In the diagram of the receiving apparatus shown in this article, the relay activates another battery with sufficient power to work a Morse sounder or ink-writer.

The code could be copied by ear as a series of taps, or rattles of longer or shorter duration, or as dashes and dots on the tape of an ink-writer.

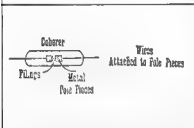
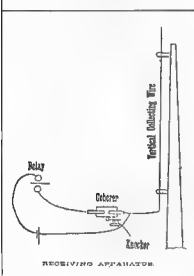
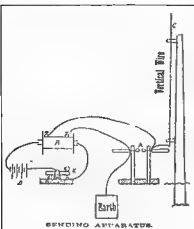
The Knocker shown in the diagram is an ordinary electric bell minus the bell. It is in the same circuit as the Morse sounder or ink-writer.

The purpose of the Knocker is to tap the Coherer to cause the filings to de-cohere and open the circuit.

Mr Selby said Dr Lodge had suggested in 1894 the use of an electric bell for this purpose.

In a publication called "Salute to the X-Ray Pioneers of Australia" published by W Watson & Sons, Ltd, Australia & New Zealand, an interesting account of Mr Selby is recorded.

It said: "Long before Marconi sent the first



signal hurtling across the Atlantic, Selby was engaged in wireless experiments which were the subject of an article published in the 22nd November 1897 issue of the *Australasian*.

Two months later he received a letter from Professor Oliver Lodge referring to wireless developments he had communicated to the distinguished English scientist.

"It was Selby who transmitted the first wireless signal in Australia."

His choice of electricity as a hobby arose out of an implement no more significant than a tin tacker. It happened in this manner. When a boy at school he was selected to carry out the time-honoured prank of placing a tack in the master's chair. The trick succeeded so well that it is

recorded that the learned gentleman suffered pain in a certain part of his anatomy.

Exceedingly wrath, he sought the culprit, and extracted a confession from young Selby, who was reported to the headmistress. That lady punished the youthful offender by withholding from him four prizes that were due to him at the end of the term. Considering this penalty too drastic, the master took the lad aside, forgave him and presented him with a book. It was this book which fired the young scientist to embark upon his electrical experiments. Although his parents greeted his decision in a lukewarm manner, relatives and friends encouraged him to proceed.

As far back as 1878, G W Selby was experimenting with coils and tubes. In 1880 he exhibited a number of Crookes Radiant Matter Tubes before an interested audience at the Royal Society's Conversazione held at Melbourne.

There is still to be seen a programme printed for the Science and Arts Conversazione held at Melbourne Town Hall on 24th September 1885. In this it is announced that G W Selby would demonstrate -

Crookes Radiant Matter Tubes.
Vacuum Tubes.
Induction Coil.
Electric Transmission of Power.
Dynamo Electric Machines.

TEN YEARS BEFORE ROENTGEN

Selby was actually operating a Crookes tube 10 years before Roentgen discovered X-rays in 1895 by means of a similar tube.

Had it not been for the fact that G W Selby was ill of scarlet fever when the announcement of the revelation of X-rays reached Australia, it is possible he would have preceded Professor Lyle in the verification of Roentgen's discovery. However, upon recovery early in 1896, Selby set himself to produce X-rays along lines indicated by the great German scientist, losing no time in examining the Crookes tubes still in his possession. Luckily, some were functioning, and he already had the rest of the apparatus required for a test.

While pondering a suitable subject it occurred to him that there might possibly be a rat caught in the trap set in the cellar of his Malvern home. Descending, he found his hopes realised, for there was a rat ensnared in the trap. Here then, was a body for his first successful radiograph. A reproduction of this radiograph was published in the *"Australasian"* of 16th May 1896.

Reproduction of rat radiograph

From that time onwards, G W Selby carried out in an honorary capacity X-ray work for several Melbourne doctors and hospitals.



TELEVISION: A PIONEER REMEMBERS

After World War 2 the Australian Government did not want experimenters dabbling in television, but that didn't stop the pioneering spirit of a few in our fraternity. One of them, Len Moncur VK3JLN, remembers the saga of trying to get an "Iconoscope" — the then TV camera tube only available from the United States.

He said "I was hostile over the government's action at the time in refusing to allow us to buy an Iconoscope."

"The government didn't want us (experimenters) creating a public demand for television — there were more important things needed like housing and post-war reconstruction."

Len graduated from shortwave listening to take out his licence at the age of 18 in 1928. He said it was a logical progress from radio to TV experiments in his early days.

In fact after reading a few overseas articles on Logie Baird scanning discs Len began TV transmissions in 1932.

"The TV signal at first was literally from one side of the room to the other."

"There were a couple of others experimenting also in New South Wales and South Australia, and I used about 56MHz," said Len.

In 1934 he decided to visit the USA, and meet some of the many DX friends he had made.

He said: "I bought an A Model Ford coupe, and with QSLs in hand visited 83 amateurs."

"The QSLs were an open sesame to everything."

While a visiting one shack he was asked by another station on air what route he would be taking. The next day while driving down the highway he heard a car horn sending CQ in Morse and stopped. One amateur had sat on the side of the road sending CQ to every passing car with a Californian numberplate.

The hospitality was running hot for Len and he was invited home. About 10pm the amateur showed me his TV set, and I watched amazed at a commercial TV programme, Len recalled. "I flippantly said I would like that (TV) in Australia," he said. Immediately the amateur offered me the TV set, but I politely declined saying it would not fit in my coupe.

To Len's surprise the amateur had the inner workings of the TV set sitting on the back seat ready for his departure next morning.

On arriving back in Sydney, almost penniless, ship's passenger Mr Moncur posed a problem for a customs officer. The words "television set" did not appear in the customs book of words.

Len said the officer asked him which were the most important parts in the TV set, and then fetched a set of tools.

"You hack out the parts you want," said the officer.

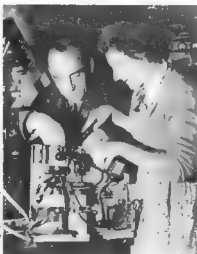
Len said: "Then with great ceremony the remains were dropped into the harbour."

The most important parts obtained by Len included a state of the art Baird scanning disc, which helped further his TV experiments.

During WW2 Len served his country's war effort like many radio amateurs, with his involvement being in the field of radar installation and the training of others.

After the war he wanted to further his TV experiments by using an Iconoscope.

About 1948 an exhibition was to be held in Melbourne and the WIA was invited to put up a stand. It was suggested by an organiser, a



Len and his XYL Phyl working on a 2m rig in 1958.

Reverend Elliot, that there be a display of amateur TV. Len said he could oblige — if he had an iconoscope, but these were not available in Australia. However Rev Elliot arranged for the Mission of Seamen in New York to give two Iconoscopes to the Mission of Seamen in Melbourne. If all went well they were due to arrive about two weeks before the second exhibition in 1949.

Len kept track of the important cargo via amateur radio, and great publicity was being made of how TV would be shown at the exhibition.

Alas, the Iconoscopes got lost, and on inquiry customs said they would not be allowed into the country because the Iconoscopes were not unsolicited gifts.

They finally arrived — the Monday morning after the exhibition finished.

At the 1950 exhibition the general public was finally shown the wonder of television — this was six years before commercial TV started in Australia for the Melbourne Olympics.

Len found himself giving a 10 minute lecture on how TV worked.

"I did great magical things like turning the picture upside down, he said. On one night there were three 18-year-old girls among the crowd and two of them described their girlfriend as being most photogenic on TV. The girl asked Len if she could see herself on TV, and Len replied "only if you can run fast enough."

The crowd urged her to give it a go. She ran between the camera and TV screen and missed herself every time. Len said that incident made him understand that not one of the crowd which had heard a lecture about TV knew what he was trying to tell them.

When commercial TV began Len lost interest in the mode of transmission which had then ceased to be experimental.

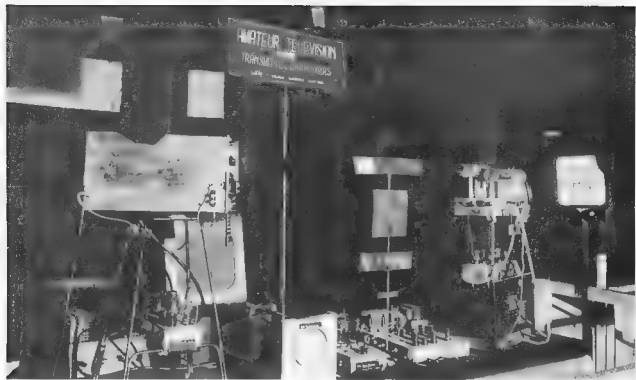
Len's ambition is to travel and this month is in China with his wife Phyl. It's their 97th country, and they hope to notch up 100 countries with a European holiday next year, or as Len puts it: "Our DXCC of countries."

Making films is another of Len's activities and he has won several awards, including those from the Melbourne Film Festival. One film was an animation of the opera Madame Butterfly using dolls which required their physical movement (placement) by hand and many thousands of camera shots. The cruel treatment of golf balls by inefficient golfers was the theme of another animation. It used 100 or more golf balls with pipe cleaners for arms and legs, and again using the same technique brought them to life.

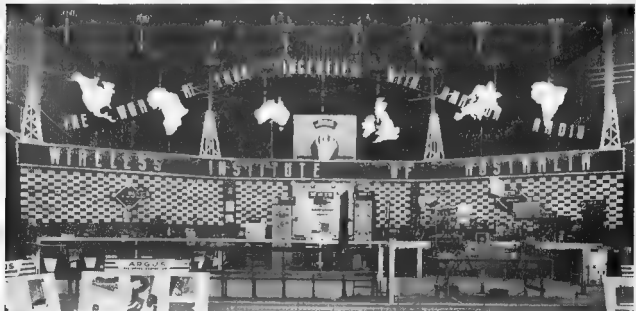
Len Moncur has a drive to do something nobody else has done — he gives it a go — which is the mark of a true experimenter and pioneer.



WIA Stand at the All Models Exhibition with VK3ZAO operating the 2m station.



The Equipment used by Len in 1949



WIA Display at the All Models Exhibition in Melbourne in 1955. Len's TV equipment is to the right. The chequered back-board is made up of QSL cards.



SW Gadsden 1930-31



Harry Kinnear 1934-35



David Wardlaw 1959-63

WIA VICTORIAN DI



Sid Clark 1977-78

- 1911-13 M A K Ry
- 1913-15 Sidney T
- 1915-19 Institute
- 1919-20 Victor Nig
- 1923-25 Howard K
- 1929-30 Howard K
- 1930-31 S W Gad
- 1933-34 George T
- 1934-35 Harry Kin
- 1935-41 W liam G
- 1939-41 Herb Ste
- 1945-47 Harry Kin
- 1947-50 Bob Can
- 1950-52 Bert Sam
- 1952-57 Gordo D
- 1957-59 Fred Bai
- 1959-63 David Wi
- 1963-65 John Bai
- 1965-68 Ken Piro
- 1968-70 Keith Ro
- 1970 (part) Ken Sed
- 1970-72 J m Lloy
- 1972-74 Peter Wil
- 1975 (part) Russel M
- 1975 (part) Ian More
- 1975-77 P Fitzh
- 1977 (part) Alf Kerr
- 1977-78 Sid C ark
- 1978-80 Eric Bugl
- 1980-81 Alan Nob
- 1981-82 Peter Du
- 1982-83 Alan Nob
- 1983-85 J m Lloy

A gap in information between 1921-23 and 1926-27 photographs of all past presidents with the aim of displaying the Divisional Headquarters about either the full-time or part-time members, or P H McE, inaugural meeting of the founding Treasurer, and able to help with any other information about these founding



Bert Semmens 1950-52



Bill Gronow 1935-41



Bob Cunningham 1947-50

VISION PRESIDENTS

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V Cole
in abeyance
Kingsley Love
Kingsley Love
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88. A project to collect
t Presidents is continuing,
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arriers. Nothing is known
unding President, M A K
ray who convened the
n 30/11/1911 and was
perhaps a reader may be
en the barest of details
members of this division.



Alan Noble 1980-81 & 1982-83

Ken Seddon part 1970



Jim Linton 1983-85



VK3 WIA NOTES



PRESIDENT'S REPORT 1984/85

Delivered at the Wireless Institute,
Victorian Division, Annual General Meeting,
Wednesday, 8 May 1985

MEMBERSHIP

The number of WIA members continues to increase in Victoria, as it has for the past three years.

The 1985 Membership is on target and by December the Division should have recorded its fourth consecutive year of growth.

A concerted effort has been made by the 1984/85 Council to increase membership — and special thanks go to those individual members throughout the state who have recruited new members.

DOC LIAISON

A good relationship between the WIA and DOC is to the benefit of members.

Representations on interference, examinations and licensing have achieved satisfactory results.

An agreement now exists whereby either DOC or the Institute can call a joint meeting should a significant problem arise.

Normally routine matters are dealt with by letter or phone.

RADIO MASTS

As published in AR magazine, May, planning permits are now required for some radio masts in residential areas.

While the outcome of this matter hasn't been entirely to the Institute's satisfaction, it could have been far worse without the WIA making its views known.

The Minister's decision could be seen purely as a political one in that it appears to be a compromise between what a minority of councils through the MMBW wanted, and the position taken by the WIA.

However, the Institute through Alan Noble VK3BBM and Council continue to monitor the situation.

Although members are facing difficulties in their applications for building permits — no radio amateur has yet sought a planning permit.

In one recent case a member at Ringwood had opposition to his building permit application from a neighbour.

Part of the objections' case included a valuers report claiming a proposed mast would have an adverse impact on property values.

The WIA obtained its own independent valuers report, which costs \$100, stating the property values would not be affected. An appeal against the Council's refusal to grant a permit was upheld.

WICEN

This area of Institute activity has never been stronger or more professional in Victoria.

The post-Ash Wednesday restructuring including formation of regions has enabled the workload to be spread and means it can confidently respond to calls for help from government and welfare agencies.

Fires in January this year saw the Department of Agriculture making good use of the Amateur Radio Service, and the Department throughout the state won't hesitate to call on us in the future.

GENERAL MEETINGS

Sadly these have deteriorated in recent months because no-one has been available to arrange speakers and adequately publicise the meetings.

The Frankston and Mornington Peninsula Amateur Radio Club has offered to make its club venue at Carrum Downs available for a WIA general meeting night.

This seems to be a good idea and could be expected to attract members from the south eastern and peninsula areas.

Perhaps other metropolitan clubs might offer their venues for a WIA meeting.

WIRELESS INSTITUTE CENTRE

The purchase of a better and more reliable photocopier has added a new dimension to the production of correspondence and public relations material.

The Administrative Secretary, Maxine Conheady, contributes greatly to the functions of Council, and in recent months her workload has expanded to include assisting the AR Liaison Officer, and mailing of the Victoria 150 Award and WIA 75 Award.

Without Maxine's dedication the active public relations and membership drive campaigns would not have been possible.

Thanks also go to the team of Wireless Institute Centre volunteers who keep the centre open Monday to Friday, and handle out of hours inquiries recorded on the phone answering machine.

PUBLIC RELATIONS

Strong internal and external public relations continued throughout the year with most achievements being recorded in AR magazine.

An awareness of public relations has been translated to most WIA zones, committees, and adopted by some individual members.

Taking advantage of the WIA's 75th Anniversary and the issue of a pre-stamped envelope by Australia Post on 22nd May, the Institute has obtained permission to display leaflets in all 330 official post offices.

Additional material including a take away leaflet will be available at thirty philatelic sales centres.

WIA 75

This has been fully covered in AR magazine. The Victorian Division has played its part by initiating and carrying through the highly successful WIA 75 Award.

Our Division was the first to activate the commemorative call sign VK75A.

Members have got right behind the anniversary celebrations including the CW Contest and World Amateur Radio Day WARC Bands activity.

It was a VK3 member who designed the WIA 75 logo — there were also other good entries from VK3 for both this competition and for the amateur radio posters.

CLASSES

In the past twelve months even more effort has been necessary to keep the theory and Morse classes at viable levels.

There's a serious decline in the number of candidates going to the Novice theory exam — and

the WIA in Victoria will try all it can to attract newcomers to amateur radio.

This is where individual members can assist by making it a personal aim to introduce someone to the hobby.

VICTORIA 150

The state's sesquicentenary which started last November has been celebrated through a commemorative call sign, general availability of the alternative prefix VI, and the Victoria 150 Award.

Use on a roster basis throughout the state of V13WI enabled clubs, zones and individuals to take part in a special event.

At the same time I brought them together in a union of common purpose.

The public relations value of our hobby's participation in Victoria 150 includes the opportunity to get a message to all members of the Victorian Parliament.

They were sent a copy of Amateur Rad-o magazine — the December edition which featured Parliament House on the front cover and contained a WICEN post-Ash Wednesday article and a feature on emergency communications following Cyclone Tracy.

THE FUTURE

Challenges are ahead for the WIA to further improve its membership, push even harder with public relations initiatives, and strengthen its relationship with member clubs.

With only one percent of WIA members being under the age of twenty, ways must be found to raise the number of youngsters in our hobby.

More attention should be paid in Victoria to our heritage and history before it's too late.

And in this 75th Anniversary Year, serious thought needs to be given to future direct ones for both amateur radio and the Institute. Jim Linon VK3PC

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OSCAR STAMP MAYBE

There are recommendations afoot in the US for the issuance of a commemorative postage stamp to mark the 25th Anniversary of OSCAR 1.

OSCAR 1 was the first non-government satellite placed in orbit and was launched on 12th December 1961, exactly sixty years after Marconi's first trans-Atlantic experiment and exactly forty years after the first amateur trans-Atlantic signals got through.

From The ARRL Letter, Vol 4, No 10.

AR

GREETINGS FROM
AUSTRALIA

CFM QSO/RPT WITH



VK75A

A UNIQUE CALL SIGN TO COMMEMORATE
75 YEARS OF THE WIRELESS INSTITUTE OF AUSTRALIA

DAY	MONTH	YEAR	TIME (UTC)	FREQUENCY	MODE	R	S	T



Philately Day — 22nd May 1985



The display at the Melbourne Philatelic Centre



Miss Jill Johnson displaying one of the first envelopes for sale.

Wednesday the 22nd May saw the release of the special Australia Post commemorative 33 cent pre-stamped envelope for amateur radio and the 75th Anniversary of the Institute, as reproduced on the front cover of the May issue.

The Melbourne Philatelic Centre, located in the centre of the city, had static and working displays, including an operative authentic 1936 station loaned by Mac VK3RV. The Manager of the Centre, Mr Ray Boltho commented on the interest shown by the public to the exhibition and leaflets freely available, to explain more of our hobby.

Other Post Offices in the state had varying displays concerning the launch of the envelope, as space permitted, including the Moorabark Office, where a local amateur had loaned modern and equipment of yesteryear, to foster the hobby and promote the sale of the unique envelope.

DUAL BROADCAST

Permission was given by the Department of Communications to a simultaneous broadcast being made from 3RCP Portland and patched to the eighty, forty and twenty metre bands. The programme was opened by a short address from the Minister of Communications, the Honourable Mr Michael Duffy and was followed by a forty minute tape produced by Ken McLachlan VK3AH, interviewing Mr Chris Long, Acting Electronics Curator of the Museum of Victoria. The tape comprised a tour of the museum's archives, interspersed with recordings made of Marconi, other notable gentlemen and some of the actual musical broadcasts that used to frequent the broadcast band from home-made transmitting equipment prior to World War II.

Call back stations, which were also patched through the Community Broadcast station, showed extreme interest and commented on the transmissions.

**Australia Post salutes
the radio buff**
Ballarat Courier

**Amateurs who rule the
airwaves**
Geelong Advertiser

**Radio enthusiasts
celebrate birthday**
Warrnambool Standard

**Amateur radio makes its
stamp on society**
Latrobe Valley Express

**Post Office display will
mark event**
Mildura Independent

**Talking to the world via
space**
Regional Times Express

Amateur radio design
Shepparton News

Radio stamp
Bendigo Advertiser

**Simulcast historic
occasion**
Portland Observer

Headlines used by provincial newspapers to publicise the pre-stamped WIA envelope throughout Victoria.

SOME MILESTONES IN COMMUNICATIONS

- 1832** Samuel Morse develops a system of "Morse" code
- 1854** J.C. Maxwell mathematically proves existence of radio waves.
- 1887** Heinrich Hertz demonstrates Maxwell's theory
- 1888** Prof R Threlfall repeats Hertz's demonstration, Sydney University
- 1895** Marconi shows practical use of radio waves for sending/receiving messages.
- 1896** G.W. Selby, Malvern, Victoria, experiments with wireless telegraphy transmissions and built Australia's first x-ray machine
- 1899** Demonstrations of wireless telegraphy in Melbourne, Sydney, Adelaide, Western Australia, and Tasmania
- 1900** A number of wireless experimenters known to be active in Australia
- 1901** Marconi's historic trans-Atlantic wireless

- telegraphy transmission
- 1906** Marconi Company opens radio link between Queenscliff Victoria and Devonport Tasmania.
- 1910** Successful demonstration by G.A. Taylor in Melbourne that pictures could be sent by wireless.
- 1914** Amateur Radio ceases during WWI.
- 1918** wireless experimenters serve.
- 1921** Nightly broadcasts of news by the Victorian Division on 200 metres.
- 1922** Wireless experimenters given permission to broadcast music and live entertainment on the new AM broadcast band
- 1923** 2SB (Sydney Broadcasters) now 2BL commences operation on 13th November, the broadcasting era begins.
- 1924** Experimenters make first wireless telegraphy contact between Australia, UK, and USA

- 1925** Plans begin for outback wireless, forerunner of Royal Flying Doctor Service. Experimenter Alf Tragger develops pedal wireless. Experimenters establish Austral a-wide wireless telephony communication
- 1932** Len Moncur VK3LN Ascot Vale, Victoria, experiments with television
- 1939** Black Friday, radio amateurs provide emergency communications
- 1939-40** WW2, radio amateurs play key roles in military communications
- 1950** Public demonstration of television, by Len Moncur VK3LN
Signals bounced off the moon by Victorian radio amateur Ray Naughton, who pioneers this medium with contacts to USA
- 1970** WIA Project Australia team of radio amateurs in Melbourne build Australia's first satellite and have it launched in the USA
- 1974** Cyclone Tracy, a radio amateur in Darwin and another in Melbourne set up vital emergency communication link.
- 1983** Ash Wednesday, 200 radio amateurs provide emergency communications

AR



Max VK3BQ conducting the first two-way contact across the Pacific Ocean on 250 metres.

WIRELESS INSTITUTE: TO MANY IT'S A MYSTERY PLACE



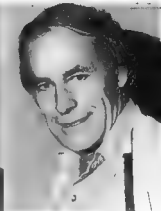
Des Clarke — Secretary



Lindsey Rohrich — Treasurer



Derek McNeil — WICEN Co-Ordinator



Bill Wilson — Council Chairman

Many members probably haven't given Australia's national radio society much in-depth thought — of course they get the monthly journal or use the various free services provided by the Victorian Division — but actually understanding the WIA is another thing.

Perhaps it's not until one has served on the Council that an insight into the Institute's operations can be fully realised. No matter whether the year is 1925 or 1985, having a position on Council can mean some hard work. You have to make sacrifices, at times this can mean going QRT for weeks and turning your energies on a typewriter, the telephone, or attending meetings.

But all the time a dedicated councillor has in the back of his mind the basic foundations of the Institute set in 1910 — "to protect and further the interests of wireless experimenters."

The Council is a barrier to the excesses of bureaucracy, governments and their agencies. It must formulate policies and strategies aimed at getting the best possible (realistic) for the Amateur Radio Service. One on-going task is liaison with DOC and other agencies to help maintain co-operation and understanding. This coupled with the work of managing the affairs and finances of the division can mean a heavy load falling on the shoulders of a few.

And being on Council can often mean you become the subject of criticism by the ill-informed. Admittedly some criticism stems from the "fear of the unknown" — a lack of knowledge about how the Institute works. But it's also generated by those in our fraternity who fail to (or don't bother to) learn the facts of a matter and vent their own personal emotional feelings.

Your national radio society is also harmed by those who hear these people rubbish the WIA, and then repeat unfounded claims on air — often by prefacing their remarks with phrases like "I've been told that

The Institute in Victoria is open to scrutiny by its members — should you hear or read anyone voicing anything anti-WIA — remember you can find out the facts through the Divisional Secretary.

As stated earlier — the WIA is a human organisation — and being human means it too can sometimes make mistakes.

But a true supporter of the Institute will seek the full facts before forming an opinion about something the WIA is alleged to have done or not done.

The WIA can be accurately described as a "human organisation" run by volunteers interested in the preservation and furtherance of amateur radio. These volunteers desire to bring out improvements to the Amateur Radio Service and put something back into their hobby.

THE FUTURE: A PROGNOSTIC LOOK AHEAD

Just what will the next 25 years hold for the world's best hobby?



Of course changes in technology will be reflected in amateur radio equipment. Industry sources predict in-built language translation to help radio amateurs (and presumably shortwave listeners) bridge the foreign language gap. Others consider microwave handhelds will be in vogue to link you with your mobile or home rig.

For this (and many other things) to happen, the thorny question of unattended amateur station operation, now prohibited, will have to be resolved.

Will in fact radio amateurs be redundant in the year 2010?

Imagine due to crowded bands and commercial pressures on the spectrum, amateur telephony is banned. It would be possible for our rigs to call CQ, make contacts, exchange signal reports, run a log and print out QSLs. All of us in 1985 would find that type of development unacceptable.

Packet radio was born in Canada/USA a mere five years ago, and is being hailed by packeters and others in Australia this year as the emerging trend. A

digipeater is operational in Melbourne and packet facilities are to be part of satellites.

No matter how well digital techniques are accepted one feels confident that telephony will remain the major mode of amateur radio transmission. But only you reading this article in 2010 will know if the confidence held now was valid.

The great potential of packet radio and related keyboard-based techniques is to make our hobby attractive to computer buffs. This issue needs to be addressed with a sense of urgency as part of any WIA strategy to increase growth in radio amateur numbers.

Other obvious challenges include the issue of Morse code being a licensing requirement (no correspondence please — this is not an invitation to open up the code versus no-code debate again), and why not have a geostationary amateur satellite for Australia, New Zealand, Papua New Guinea, and the South Pacific.

This is feasible if an amateur satellite was piggyback launched with a future AUSSAT, the domestic satellite system.



HOW'S DX

Ken McLachlan, VK3AH
Box 39 Mooroolbark, Vic 3138

It is on again, having started overseas, and it is something the hobby can do without or for that matter, anyone can do without, in my opinion

I am specifically referring to the chain letter syndrome, which I predict has been very quiet over the last three or four years but by all accounts they are around and about again. If any appear at this QTH, I will name the originator and the suggested recipients before casting it into its correct file, the waste paper basket.

There are many ways to ruin a hobby or friendship and this is one of them. In the past, the "letters" have been franked by a business type machine, probably at no cost to the originator, only to his employer who is paying the postal expenses.

CLIPFETTER

The full story is yet to be written, but the operation lasted 6 days 3 hours and 31 minutes where 11,140 CW and 19,373 SSB contacts were made in temperatures between 35 and 38 degrees Celsius with a relative humidity of 98 percent. Not pleasant.

On landing and departing two boats overturned, luckily no serious injuries were sustained, seas were high and they had to suffer strong winds which brought in the salt spray, if it was not raining. The cost, estimated to be in excess of US\$60,000, for less than a week's holiday, to give those members of contacts in round figure equals US\$2 per QSO.

Thanks from all DXers, particularly those in the Pacific, to all the operators and donators would be gratefully accepted to help defray the expenses on the members and be sent to "1865 Clipfetter Expedition" c/o Rusty Edge W8CAT, 12868 La Crest Drive, Los Altos Hills, CA94022, where they will surely be appreciated.

All QSLs to YASME, PO Box 2025, Castro Valley, CA 94548 USA

MY ATTENTION

After all the attempts, it appears that IOSRY has received the following letter translated from the Greek language and as printed in ORZ DX

Sacred Community of Mount Athos

Karis, 21 2.85

To the Civil Authorities of Mount Athos

Dear Director

As an answer to your letter (15.1.85) about the request made by the radio amateurs to visit and transmit from Mount Athos, we are sorry to have to tell you that the Sacred Community have decided to forbid forever the making of such transmission from Mount Athos.

Truly yours,

Signed, All the representatives and directors of the twenty Monasteries of Mount Athos.

In my opinion, it is sad that the monks have seen fit to ban a hobby in a rare DXCC country, that means so much to all amateurs, worldwide. My comment is, why?

UGANDA AND OTHERS

Some say there is no paperwork, as the authorities will not issue it because of more important duties and verbal permission is all that is required. This does not suit Don Search at the ARRL DXCC Desk. Others say the written permission has been granted and it is in Don's hands. Apparently Don says that he has documentation of a number of stations but has not processed them as yet.

I go along with the last statement but guess we will just have to wait, see and hope.

On the subject of what is and is not acceptable, the "nots" include C3, SUTLD, DJ5CQ/SVIA and F68FNT. The good news is, if you are a 40 metre enthusiast, that JSUW1 was genuine for the frequency of 7.000 to 7.100 MHz. Outside of this allocation will not be allowed owing to the specifications noted on his documentation.

BAHO ENTHUSIASTS

Lee KH6BZF, quite a humourist, predicts very good HF propagation between the 9th to the 13th of this month. The HF types can expect good activity possibilities from the 1st until the 8th and says there is

only 1000 days to go until we reach the bottom of Cycle 21, that is January 1988. This cheerful gentleman asks "Have you another hobby?" He closes his Newsletter with the notation "If we indulge — we judge — in a photo please, not head and shoulders either, thank you."

HERKIS DEVALUATION PROBLEM?

Remember Herik FROLO. Who could forget? Well Herik now sports the call FR5DX and was visited by a couple of European amateurs, demanding an explanation for where were the cards that the dollar notes were sent for Heriks reply was that it was illegal to send currency in the mail system. I was lucky in getting my card with no hassle and apparently it is not illegal in Herik's code of ethics to receive it.

Herik's many excuses, for not receiving mail at the time, sounded to be genuine but my question is "Did he get in before the devaluation?" and what a killing he must have made either way, as I listened to him a couple of years back, for hours on end, day after day, working the United States at a rate of 30 or 40 contacts per hour. No further comment is necessary except perhaps to note that this has happened in other countries including VK over the years. All countries have their "rare ones"!!!!

FORUM

George VK3GI has brought to my attention that he worked HGR5TRKPS last July and has just received the card. The contact was quite difficult and the reports on SSB were 5x1 both ways.

To George's amazement, he received a card with most of the information pre-printed, including the report which was pre-printed at 5x9.

George states "What utter nonsense this makes of the reality of a contact. I do appreciate the pressure in sending out QSL cards in the thousands after a DXpedition, but is there any value in giving RS reports at all?"

George likes it to contesta, where the monotonous 5x9 reports roll off the tongue hour after hour and in my experience cards are requested to, at times, repeat Call and/or report and serial number.

George would like to know how other DXers feel about this matter and I am going to ask you to write to him direct to save overloading my Post Box and trust that he will correlate the replies and pass them on, so they may be printed for the readers' benefit.

George, I don't agree with anyone, but you are an exception with this one and I wonder how the ARRL DX DESK views a pre-printed signal Report Comments to George please at PO Box 22, Woodend, VIC 3442.

THE UN AT 40 AWARD

Not trying to steal the Awards Editor's thunder but a special "UN AT 40 AWARD" will be issued to any station or SWL working two of the United Nations stations during their 40th Anniversary Celebrations between 1st January and 31st December 1985. The stations are 4U1ITU, 4U1UN and 4U1VIC.

The cost of the award is US\$5 of which UNCEA goes to the United Nations Children's Fund (UNICEF).

Applications must reach the United Nations Recreation Council Amateur Radio Club, United Nations, Room DC1-0724, PO Box 20, New York, NY 10017 USA before the 1st February 1986.

4U1ITU has been very active on the bands. The operators have been FB5YS and FB4HX.

BALVAGHEE ISLAND

The Madeira Club is intending to make an all out effort between the 10th and 20th of next month. No call or QSL information as yet. For those interested the IOTA reference is AF-47.

SWEDEN CELEBRATES

Congratulations to the Swedish Amateur Radio Society who celebrate their sixtieth anniversary this year. Selected call signs using the prefix ZS have been heard.

KOREA

An amateur from the German Democratic Republic will be in the People's Republic of Korea and hopes to obtain a licence. Call signs and documentation particularly could be another problem and an interesting "red tape" exercise for the licensing authorities!

BITS AND PIECES

Treat SA1A as a Pirate! ** YV0SE and YV0SEE are thought to be YV40SE and YV40SEE, a special call from EAST Germany. Y40BER has been heard and his QTH is Berlin! ** Si Brandon didn't evaluate Amateur operators from 387 and 388 by "foreigners" as now forbidden. ** Ghus OX5HT showed how it should be done, he made 7210 QSOs from "Bul" 9USJB's QTH on all bands 10 through to 80 metres. Only one "G" station appeared in the log QSL to ONSNT. ** Many European stations not happy about the treatment, even though propagation was good, from the Clipfetter Expedition. No trouble in the eastern part of VK. ** XE1MDX made it, but only for 46 hours, for the many VKs that made it, QSL to XE1MDX. ** Creta will be activated by H4WOPU and his XYL LYNN SVOOV until December Father John SVOO2 is also presently active. ** Three stations, E1ACK, U3WHY and UA1OT are active from the much sought after Frans Jozef Lams. ** 342CZ and 342TO are unlicensed licenses therefore they are to be treated as "pirates". ** 9USWV mainly active on CW. ** Twelve JY nationals have passed the examinations and are awaiting the allocation of their licences. ** A wellknown VK3 operator is now in North America, he has the XYL operating the prototype mobile and having a "Ball". ** A positive asp second was put into WWW, WVVW and WVVH on the 30th of June at 23 59 60 UTC. This will retard UTC by one second.

Ladies and gentlemen, check your clocks! ** A well known VK3 operator and QSL Manager has received an invitation to go to the Gold South this winter. Will he accept? ** Rumour has it that the residents of Papakura in ZL are jubilent Dave ZL1AM, one of the controllers of the Pacific DX Net and Aote ZL1ALE have the tower down for repairs. The neighbours can now see the sky! Is he as assured it will not be for long. Will it be a better signal? ** Still no contact or mailed log to hand on the last boat out from Macquarie Island, from Denise VK0YL, which unfortunately does not allow me to verify the many cards that I have on hand.

PERSISTENCE

Remember in last month's column an appeal for help by Peter G3VIE? Well Peter solved the puzzle of where to find the much wanted card. A scrutiny of the VK calls one by one, a likely looking similarity, an enquiry to the overseas telephone operator, subsequent phone call and an amazed VK Peter luckily started at the front of the book and not the VK8 listings as it was found in the first few pages.

Congratulations on your persistence and determination Peter after 15 years of waiting.

DEDICATION

This month regrettably will be the last segment of "CW SWLING by L30042". Enc has been the constant contributor, except for an overseas trip, since I took over the column.

From all readers and particularly from Bert, my XYL and myself a big thank you Enc, for your contributions that would appear regularly in the mail box on the appropriate day.

Enc feels that it would be impracticable to continue on a regular basis due to the impending change in his lifestyle, which is on the secret list at the moment.

It is hoped to reveal Enc's secret in a future edition of the column but in the meantime our friend, health, happiness and every good wish.

FRANCE

Confusion! The French authorities have decided that first-class licenses may use either the "F" or "FE" prefix at their discretion. For example FB5YS may also use FE6YS.

WILLIS ISLAND

The new operator Kim VK3ZB, will be active until Christmas QSLs to VK8YL.

PREFIX CHANGES

VX5 will be used to celebrate the 100th birthday of the City of Lethbridge, Alberta and may be used in lieu of Vex5 until the 15th to the 27th of this month. The "X" prefix has been authorised to commemorate the 100th anniversary of Parks in Canada.

from the 29th June until the 29th August Newfoundland X01 Labrador X02, Maritimes X11, Quebec X12, Ontario X13, Manitoba X14, Saskatchewan X15, Alberta X16, British Columbia X17 NWT X18 and the Yukon XK1

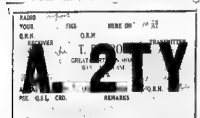
PROPAGATION UPDATE

Lee KH6BHF, in KH6BZF REPORTS, estimates that the following dates should be good for long haul twenty metre activity.

From the 1st to the 3rd, 5th to the 8th, 10th, 15th and 16th 25th and 28th and the 28th of July Thanks Lee and we trust that you are correct.

SWL CARDS

Below are reproduced some SWL cards received by Eric L30042 The two Australian cards, OASJK and



AZTY were of the 1928 vintage. The overseas cards are 1933. All of course on CW.

MINIT KIRKWOOD

This old-time DXer, who is now a Silent Key, had the unusual call of RAEM. RAEM was the call of the SS Cheluskin that was smashed in ice in the Arctic Sea in 1934. Ernst was the Chief Radio Operator and was allowed to use the call as late as 1965.

Many references are made to him on some USSR cards and there is an Antarctic and Arctic award in his honour.

TRIVIA

Coaxial cable has been around for over a century. It was patented by Werner Siemens, a German inventor and industrialist, on the 27th March 1864. The first cable of this type was used to carry TV signals between Berlin and Leipzig, for the Olympic Games in 1936.

This type of cable has been used by the majority of amateurs in their time and is still being updated to provide better characteristics.

STATISTICS

The FCC released the following figures regarding Amateur Licences as of the 29th March 1984.

The USA has 410,775 individual operators in all Classes and in January 1, 1987, February 1, 1984 and March 1, 1983 amateurs upgraded their licences. In the same period 4,586 people became new licensees.

CW SWL-ING WITH ERIC L30042

20MHz

VK2R5Y, VK3AGR, VK3GKF, VK3KJN, VK3PW

17MHz

HL4VJ, HL8ARC, JP1FEE, J43CXQ, J47YFB, JH6GQ, JH8OPP, K9HSM

15MHz

ED8AA, K8FIE, FK0AT, HL1CG, IL1J, KG6JG, LA7XB98, P29R1, SW2UF, UA0LZC, U1R1RK, UZ4CWP, UZ0LW, VETCLZ, X1F0CC, X1EMZH

10MHz

DL300, DF5MX, DJ8YF, F3BC, FTTP, G2BY, G3STA, G6ZG, G8PW, HB8QC, JR2QKH, J4RHXO, LX1BJ, SM4DG, SM5OFF, VK1FP, KU1H, W2AGT, W3ORU, WY4E, KE8RB, WY1TTL

7MHz

AH6B, CE2G3, G0RDM, CT1BXC, CT2AO, DF8PH, D9GSD, H4H6, F4S0Y, EA1L, E4SKJ, F4KBA, FMSO, G0DD4LVU, HA8QA, HA1KSK, HA5GN, HB8BFQ, HB8LC, ID3MK, IDLDS, IDLBJ, K4RRM, KP2J, LZ1KVF, LZ2KQV, L29MAY, O4ZVY, O5GSM, OY1LD, NP4QJAE, S4BCVX, SPSW6V, SV4AM, TDP1, U43TG, U4R1J, U4QJAW, U65PW, U7WH, U7BZO, U7S6G, U7BAX, W1ATY, YB3CO, YC3SD, YU1AB, YU3DKR, YU2AK, 4N7A

7.0MHz

VK2APQ, VK2BAT, VK3JU, VK4KO, VK5NM, ZL1HU, VK3RVS, VK3ST

QSLs RECEIVED BY ERIC L30042

A3SEA, HA8RT, J4WVWUJ, K1AF, O13CCQ, ON7KO, UK3AA, UK4KJ, VU8TE, Z8MHZ, Balcen, N7YL, YV4AU, Z47EMG, ON8T2, Z474, 4X4HQ, 5W1ER, 5K2BE and 10MHz: D3JF, DFO8A, D17AEAEAS, Q4JADR, J4AFM, J4SDM, W1N9J, W2GT, W2KTF, W4SLBA, W4RKR, ZL4POC

THANKS

This column would not be possible without the following. The Editors of weekly, bi-weekly and monthly newsletters including the ARRL NEWSLETTER, RSGB DX NEWS, GRZ DX, LONG SKIP, PAKAPARA, RADIO CLUB NEWS, DX FAMILY, FOUNDATION NEWS, LETTER JAN and JAY O'Brien's CBL, MANAGER LIST and KH6BZF REPORTS. Magazines including QJ, CQX, CST, RADCOM, JARL NEWS, KAL, NEWS, CQ, 73 for Radio Amateurs, BARG NEWS, BREAK and ETC.

Members who have contributed include VKs ZJM, PS, 3GJ, YL, YL, G3NBO and 30042 Overseas amateurs include G1QD, G3VIE, IBSAT, ZL1AMM and ZL1AMN. Special and sincere thanks to one and all.

At the last meeting of the Publication Committee, mutual agreement was that I would continue writing these notes. I sincerely thank the Committee for their confidence, the contributors over the last four years and look forward to more contributions from all readers in the future.

COMPUTERISE YOUR SHACK ... WITH A COMMODORE COMPUTER SYSTEM

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This plug in cartridge for the Commodore 64 features split screen and expanded screen modes for reception and transmission of CW, RTTY (ASCII & BAUDOT) and SSTV transmission. Extremely versatile with over 40 operating commands. (New revised version.)

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87 SWAN STREET, RICHMOND, VIC. 3121. PH: (03) 429 1966



HIGH TECHNOLOGY

AR85



AWARDS

Joe Ackerman, VK4AIX
5 Koomooloo Court, Mermaid Waters, Qld 4218

FROM: Federal Awards Manager ANNUAL UPDATES

The Federal Awards position now comprises two members, VK4AIX and VK4LC. Joe VK4AIX handles all the overseas awards and submissions to ARRL, Bill VK4LC handles all WIA awards.

Evidence has been received to confirm that VUTWV did operate with Indian Government approval from the Locusts. Their QSL gave no indication where the operation was from (see DXCC rule 1.3). If your card was rejected please resubmit it to F.A.M.

Cyprus ZC4 was previously mentioned in AR. QSLs for the new country will be credited from 1 June 85. The QSLs from ZC4 must indicate that the contact was made from a Sovereign Base Area. If you have doubts please forward the QSL.

Now for details of new DXCC members, DXCC updates and new WIA Awards Certificates issued up to 1 March 85.

Again it is requested that new submissions for DXCC be on a photocopy of the DXCC listing from the 1984-85 Call Book. Thank you for your co-operation.

DXCC NEW MEMBERS

Callign Phone	Certificate Number	Total
VK8ZA	329	102
VK1FL	330	101
VK4EL	331	100
VK3AFT	332	100
CW		
VK8FS	125	145
OPEN		
VK8FS	226	229
VK3DNC	227	110
RTTY		
VK8RY	003	102

WVAKA AWARD

VK7DS	1268	J3WUG	1299
VK1AL	1269	JF2EX	1300
VK2DNT	1270	JABAKV	1301
IN3ANE	1271	OK3GCP	1302
OK3YCA	1272	JAF7FB	1303
G3YIM	1273	DJ4SK	1304
4Z4VG	1274	G3WV	1305
JAT7PE	1275	VK3KYL	1306
UB50BD	1276	JESWTH	1307
VW3DR	1277	JR3GJL	1308
UA0FL	1278	VU2JXO	1309
RAD3KE	1279	JG1PVZ	1310
UA3FT	1280	JH2ABL	1311
JG3EUM	1281	JA3UCO	1312
JR1UO	1282	JA1ATB	1313
JAS0VP	1283	JA4CPZ	1314
JR0CFD	1284	JH4MPI	1315
VK6BM	1285	DL1ES	1316
OK5KL	1286	VK1MV	1317
ON7ZM	1287	RP8PB	1318
JM1HGP	1288	IM2OP	1319
JAT7QC	1289	VK4YV	1320
JR5AT	1290	GM2BUD	1321
JAS3CL	1291	JA7OUV	1322
JR3RRY	1292	JH7DFZ	1323
JF1QCL	1293	YB3CDL	1324
UB5EDU	1294	JE1ZSK	1325
UB5BAT	1295	G4KFX	1326
UA3DFK	1296	IBSAT	1327
UY5OO	1297	YB0BZZ	1328
UA5EJ	1298	JA7IC	1329

DXCC LADDER AS AT 1-3-85

DXCC — PHONE	
314 — VK8RU, VK8AB, VK8MK, VK4KS, 310 —	
VK4VC, 309 — VK8KL, VK8HD, VK4AK, 307 —	
VK7LZ, 306 — VK3JF, 303 — VK4FJ, 302 —	
VK3AK, VK2VF, 301 — VK4LC, 300 — VK8ME,	
VK3AWY, VK2DSE, 299 — VK5LN, VK3AMK, 298 —	

VK8FS, 296 — VK5WO, 293 — VK7BC, 291 —
VK8VL, VK4PK, 290 — VK3RF, VK2APK, 289 —
VK8BH, 281 — VK2AHH, 279 — VK8FR, VK4BG,
VK3DU, 278 — VK6AJW, 275 — VK5OU

DXCC — CW
310 — VK2QL, 306 — VK3YL, 300 — VK4FJ, 299 —
VK3XB, 292 — VK3YD, 291 — VK4RF, 290 —
VK4UC, 280 — VK8HD, 279 — VK2APK, 277 —
VK3KS

DXCC — OPEN
314 — VK8RU, VK8MK, VK4KS, VK3YL, 313 —
VK4SD, 312 — VK8HD, VK4AK, 310 — VK4FR, 309 —
VK7LZ, VK3JF, VK4FJ, 305 — VK5WO, 303 —
VK3XB, VK3YH, 302 — VK7BC, VK3AK, 301 —
VK4LC, VK4PK, 299 — VK3AMK, VK6F, 298 —
VK3OT, 297 — VK2APK, 293 — VK4UC, 287 —
VK4BG, VK3JA, VK2AHH

WVAKA (WIA)
VK4ZJB — 19, VK2BNN — 20, VK2OF — 21
VK4ZNC — 22 VK3VF — 23 VK2YO — 24

WAS (VHF)
VK4ZJB — 155, VK2BNN — 156, VK3YTT — 157,
VK3VF — 158

VK3VC
VK2BNN — 118, VK3VF — 117

HAIVKA (SWL)
UA9-14530 — 60, UB5-0732569 — 81, L30055 — 82,
UA3-1687 — 83, ZL2-266 — 84, U05-039166 — 85,
UA0-1038 — 86, UA3-170483 — 87, U02-03726 —
88, U05-085484 — 89, UA0-101099 — 90,
U05-076869 — 91, UA3-135215 — 92, VK3-L30037 —
93, ZL2-202 — 94, SC DX 480 — 95, ZL2-2259 — 96,
J7-8257 — 97, JA2-8764 — 98, JA2-8764 — 99

DXCC OVERSEAS MEMBERS
311 — WA3UP, 298 — WB3CQ, 140 — G3HBC,
104 — ZS5CO

Enquiries have been made to the Federal Awards Manager for information relating to awards which are issued by the ARRL, QSL Magazine and 73 Magazine. Full details of these awards will be published in Amateur Radio for the information of amateurs and SWLs.

ARRL AWARDS

The ARRL sponsors the DXCC, 5BDXCC, WAS "Satellite 1000", All Operators Club and Code Proficiency Awards.

The DXCC Award is one of the most sought after awards. Its issuance is carefully supervised by three staff members at ARRL Headquarters. Separate DXCC Awards are available for: mixed modes, all phone all CW, RTTY, 160 metres and satellite.

Applications must be made on the correct forms and endorsements which are available from ARRL Headquarters for an SASE. The forms will be returned, together with a guideline for postage fees if you require the return of your QSL cards.

Further information may be obtained from: ARRL HQ, 225 Main Street, Newington, CT 06111 USA.

Under the new call system in the USA where a call has been issued for a call area the amateur, on moving to another call area, retains his original call sign. This now makes it possible to work WAS with all W3, W4 etc. I wonder if ARRL will have an endorsement for this achievement?

73 AWARDS

The editors of 73 Magazine provide the following awards: The DX Country Club, Specialty Communications Achievement (two classes), Worlded All USA and Century Cities Awards.

These awards do not require you to forward QSL cards, only certification made by either two other amateurs or a local club secretary.

Further information may be obtained from: 73 Awards Manager, Mr Bill Gosney KE7C, 2665

North Busby Road, Oak Harbour, Whidbey Island, WA 98277 USA

CQ MAGAZINE AWARDS

Some very interesting awards are sponsored by the Editor of CQ Magazine: WAZ, WPX, WWPX for Novice operators and VPK for SWLs.

Application form CQ 1051A is available from the Awards Editor by sending an SASE. Use sufficient postage as required by return air mail.

Cost of the awards is \$US4.00 for subscribers and \$US10.00 for non subscribers. Endorsements require application on a special form and cost \$US1.00.

Address: CQ DX Awards Editor, Mr Billy Williams, N4LFE, Box 9673, Jacksonville, Florida, 32208 USA.

ALASKA GOLDPANNER AWARD

Remember the lure of gold and the halcyon days of the gold rushes in Australia, California and Alaska?

To commemorate the entry of Alaska as the 49th State of the USA the Alaska DX Association on has sponsored an award in ghting, as the centre piece of the award, an OT with his pan slucng for the elusive metal.

It is produced on white litho paper, the border being green and gold. Inside the border the colour is cream with gold rays leading from the mer's pan to each border edge. Printing is in blue.

The Award is available to all amateurs and SWLs on a heard basis.

Contacts on and after 1 September 1948 are valid. QSLs are not required. A self-certified by an awards manager of a radio club or a representative of the National Society verifying that the QSLs are correct, is to be forwarded with the application together with the fee of \$US2.00 or IRCs and/or stamps (US) to the value of the fee is acceptable.

Applications to be forwarded to: Alaska DX Association, Awards Manager, Tony P. Smaker, JR, K7LAF, Box 1614 Kodiak Island, Alaska 99615 USA. Requirements: One QSO with each A, A, A prefix, AL7, KL7, L7 and W7, and nine additional QSOs with any other Alaska station, thus "4-9er".

Awards are issued for mixed, CW only and SWL only. Band endorsements are available on request.

THE WAC AWARD

The ever popular Worked All Continents Award (WAC) can be yours by simply submitting QSLs as proof of contact with each of the six continental areas of the world: Africa, Asia, Europe, North America, Oceania and South America.

Confirmations submitted with all CW mixed CW and phone will receive the basic award.

Special endorsements include: 1.8 MHz, 3.5 MHz, 144 MHz, RTTY, SSTV, SSB and phone.

A unique version of the award is available for working all six continents on each of five of six bands. Applications are to be forwarded to the WIA Federal Awards Manager, Bill Hempel VK4LC, QTHR enclosing the six QSLs together with an SASE for the return of your cards.

After certification by the FAM the application will be forwarded to the IARU. Your award will be sent direct to you from the IARU.

The world's first WAC Award was issued by the ARRL in April 1926 to Brandon (Brandy) Wentworth U6OI. Brandy is still around as K6UJ, living in Maine.

In 1930 the ARRL transferred administration of the popular WAC Award to the International Amateur Radio Union. The first WAC Award issued under the auspices of the IARU went to Sam Carter W2BZO, who was IARU and active on the CW end of the amateur band.

Who claims the first WAC issued by the ARRL and also the first Award issued by the IARU to VK amateurs?

COPPER COIN AWARD OF FALUN

The CCAF Award is issued by the Falun Radio Club, Sweden and consists of a hand-made, engraved miniature in copper of a 1-Daler-piece from the time of Carolus Rex (Charles XII) 1715. Size 57x63x3 mm or 2 1/4"x2 1/8"x1/8", weight 100 grams (3 1/2 oz).

The award can be earned by all licensed amateurs in the world, club stations included, who have been in two-way contact with amateurs within the Falun area and thereby gathered at least 10 points according to the table below. Only one contact per station and band after 1st January 1966 w.l be counted.

3.5 MHz — 5 points, 7 MHz — 3 points, 14 MHz — 2 points, 21 MHz — 2 points and 28 MHz — 2 points

A1 contacts have to be made on the same mode, i.e. CW, AM, SSB, RTTY etc. A minimum report of 336 on CW and 53 on phone must be recorded in each direction.

Applications with an attached record of the contacts claimed and \$1.55.00 should be sent to: Falun Radio Club, PO Box 122, Falun 1, Sweden.

Before an application can be approved, all amateur stations in Falun, with whom the claimant has been in contact, must have received the applicants QSL card. The award will be sent by registered mail. The following stations are located within the Falun area: SM4 — AJG-AMC-ARY-ATJ-AUL-BJX-BPD-BPU-CGP-CIM-CFCLU-CYR-DAC-DJO-DNX-EAC-ENH-ENK-EPX-FCF-FPR-FQZ-FZQ-GIB-GLC-LX-HFI-HOU-IRX-JYH-D-J-X-JNC-KR-KRL-KSM-KVB-MEC-MJH-MVW-MYG-NBG-NDW-NEI-NSQ-OCR-OHH-SKT-TU-WQ and SL4BP.

The Daler is a square shaped coin peculiar to Sweden. Coining of big sized copper coins goes back as far as 1644 when the 10-Daler appeared. Coining of square shaped pieces then went on until 1776. The 10-Daler coin from 1644 is the biggest coin in the world and of the 25539 pieces minted only four have been preserved. Falun is located at Lat 60° 36'30" N, Long 15° 38' E.

This is a most unusual type of an award and is surely one which would provide satisfaction to the recipient.

THE WASHINGTON TOTEM AWARD

The Western Washington DX Club, the north-west largest and most active DX group, takes pleasure in issuing the first W7 major award. This award is issued to any licensed radio amateur who submits proof of two-way radio contact with the State of Washington. The totem pole shown on the colourful award is typical of the totem poles once found in the State of Washington.

Requirements 1 Applicants must submit proof of QSOs with 100 different Washington stations. Twenty of these must be confirmed contacts with different Western Washington DX Club members. DX stations need only confirm twenty five Washington stations including ten W7DXC members.

2 General certification rules apply. Submissions of QSL cards is not required.

3 All contacts must be dated 1 January 1973 or later.

4 Certified lists submitted should be in alphabetical order with the date and time in UTC.

5 The Washington Totem Award is free to all stations outside the JSA.

6 Special endorsement: The Washington Totem Award may be issued for specific bands or modes if all supporting information is included with the application.

7 The W7DXC will furnish a current membership list upon request including an SASE. Address for applications: Awards Chairman, Western Washington DX Club, Inc., PO Box 224, Mercer Island, Washington, 98040 U.S.A.

ITALIAN AWARDS

The Torino Section of ARI issues the following awards to amateurs and SWLs who have established QSOs as follows.

DIPLOMA TORINO DT (1953)

Stations of Torino Province
15 for Italian stations
10 for European stations
5 for Extra European stations, all in the same mode and the same band

DIPLOMA UNITA 'D'ITALIA (1968)

One station of the Province of Torino plus 18 QSOs with 18 stations located in 18 different Italian regions.

It is not necessary to send QSLs confirming the QSOs, all that is required is to send a log extract with the necessary indications countersigned by another amateur to: ARI, PO Box 250, 10100 Torino, Italy.

AWARD "TEATRO GRECO"

This award is instituted by the Syracuse Section of the ARI. To obtain this award it is necessary to send to the ARI Syracuse Section, PO Box 130, a log extract containing all the details of contacts or listings made, not QSLs.

10 contacts for Italian stations

5 contacts for European stations

4 contacts for Extra European stations

There is no limitation to the band-12 IRCs to cover return postage is required.

The "jolly" stations are valid for 3 points. Member section 1T9: BYV-DHR-DSL-EJA-FGH-FQH-FTT-GAI-GKY-IDD-KMU-KUG-LHQ-MLT-MNG-NTQ-NTQ

PBR-PLT-QDS-QMA-RHK-RIE-RVZ-USVVE-VFZ-VYR-YRFSY-XNM-ZHB and ZVT

119 stations are very active and this award should not be a difficult one to obtain

WABAS AWARD (WORKED ACTIVE BRUGES AMATEUR STATIONS)

Class III requires 6 points

Class II requires 12 points

Class I requires 24 points

Endorsement requires 20 points

Points allotted are: phone 2, CW 3, other modes 2 with the Club Station, ON8BR counting one point extra.

Every answered QSL from a Bruges SWL will double the points for that QSO.

The same rules apply for SWLs.

No QSLs are required, just a list signed by two amateurs plus your mailing address. Contacts from the 1st January 1983 are valid for this award.

Cost is 10 IRCs or 200 Belgian francs. Updating is 2 IRCs or 40 Belgian francs plus SAE.

**U
S
A**

BELGIUM - BRUGGE

Worked Active Bruges Amateur Stations

VE3OB

Endorsement

Dated

Class

operator of

Award nr

The Award Committee

Applications should be sent to the awards manager, ON4AYL, PO Box 24, 9890 Maldegem, Belgium. Members of WABAS.

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FIELD AWARD

The Swedish Amateur Radio Society will issue the Field Award diploma to licensed radio amateurs and short wave listeners for verified contacts with fields,

as defined by the locator system adopted as from 1 January 1985 (Maidenhead locator). Contacts on or later than this date are valid for the diploma.

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A random sample of individual QSL cards will be made, which must be sent in for checking.

The application shall be made on a GCR list, containing the information from each QSL card which is required for approval. The GCR list shall be verified by the applicant's national diploma manager or other official in the applicant's national amateur radio society.

The fee is 30 Swedish Crowns, 10 IRCs or 4 USD. Application address is: Field Award Manager SSA, Osmarksgatan 43, S-123 42 Farsta, Sweden.

AR



GETTING IT RIGHT

Some months ago I quoted a local newspaper column which gave advice on adapting 240 watts appliances to 110 watts with a three-prong to two-prong converter or some such. They say a little knowledge is a dangerous thing, but I think you could say a little knowledge goes a long way. The following material forms the gist of some recent reading and hope you will find it as amusing as I did.

The scene is the Defence Headquarters conference room, and the President is discussing ways of felling a blackmail attempt based on a thermo-nuclear device hidden in the Capitol. The blackmailers are threatened with a trigger with a radio transmission. Aside from all the speculation what they don't know is that a "forgotten" OSCAR satellite, which doesn't appear on any listings of orbiting objects () is to be used for the detonation signal. But that's getting ahead of the story. Listen in as a Colonel gives all the technical details to the Big Chief.

"For a transmission over this distance he'd have to use long waves which bounce off the ionosphere and come back down to earth. That means low frequencies."

"How many frequencies would be available to him for something like this?" the Chief asked.

"A megahertz. One million cycles."

"One million?" the Chief rubbed the stub of his chin between his thumb and forefinger. Could we jam all one million of those frequencies?"

"Sir, if you did that you'd wipe out all our own communications. We'd close down the police, the military, the fire departments, everything we need in an emergency."

"Never mind. Suppose I gave the order, could we do it?"

"No, sir."

Well, the port thinkers, as they say, and there is later reference to very low frequency communications on frequencies of "10 Hertz or less, and they finally give amateur radio a reasonable plug in describing how the "forgotten" OSCAR came to be there. For me, however what would have been a fast and fun thriller had become more of a comic book. It would have taken so little to get it right, but I suppose the days of critical editing are long gone. I used to be the cardinal sin in writing a thriller was to give your hero an automatic pistol, and then have him point his "revolver" at someone.

What if a balls down is a matter of standards, and therein lies the moral of the story? Effective communication requires adherence to standards or it is meaningless, if not laughable.

Look at the Citizen's Band where the only enforced standards are a result of peer pressure. They've developed their own standards so you hear argon which sounds silly to an outsider (eg "GZB, ORA, modulate the breaker") but sounds "cool" to other members of the fraternity.

Things are different in amateur radio, primarily

because the hobby itself is serious in purpose, and generally practiced by serious people. Nothing like it used to be, as my old-time readers are undoubtedly saying, but then nothing is like it used to be. Certainly not yours truly.

Am I turning into an old-timer already? I suppose at the ripe old age of 35 one tends to take stock a bit and start to look at things differently — half of the allotted three score years and ten has already been used up. It's too soon to start thinking of yourself as a tribal elder, but it's time to realize that one is no longer a young hot-shot. One is already threatened by or at least feeling a lot of pressure from the next generation of young hot-shots. Things could be a lot worse, of course — pity the young super-star gymnast whose career is over at the age of twenty or less.

So as I grow older, I grow more conservative, and develop an ever increasing nostalgia for the way things used to be done. I use commas where one would pass it reading aloud, despite a usage from the Australian Government Style Manual that they should be used only where absolutely necessary to the sense of what one is writing.

So where have all the standards gone? Has amateur radio evolved into something so informal that anything goes? I think most of us would hope that some standards can be preserved. I have no doubt that I have led a sheltered, spoiled life in comparison with my parents, and their parents, my own children look pretty sheltered and spoiled to me. In the face of the current "me-first" culture, how can I inculcate in them an understanding that if something is worth giving, it is worth working for? Now I think I should get down to what all this philosophizing (or whining) has to do with putting brass.

As a group within the hobby of amateur radio, we Knights of the Key are a dying breed. We can all sit back comfortably and take pride in the way we operate, in the way we represent tradition, and in the way we could handle an emergency. But I don't think we have a lot to be proud of in terms of preservation of our species. Because of the disciplines imposed by the mode and our pride in our accomplishments we tend to set ourselves apart. We think of ourselves as an elite, and could not care less that other amateurs think we are a bunch of old-fashioned freaks.

Well, if this is freakshow, let's have more of it. We can beat a computer anytime, right? Yes and no. We can demonstrate superiority till the cows come home, but the computer is likely to win in the end because human nature will, like water and electricity, seek the path of least resistance. If people do not understand what we are doing, or think it's too difficult, they will ignore it and in some cases ridicule it.

If CW as a mode of operation is to continue to exist (and we are all agreed that it deserves to continue, I trust) then it follows that we must make some effort to bring newcomers into this hobby within a hobby and encourage their metamorphosis into brass-pounders.

POUNDING BRASS

Marshall Emm, VK5FN
 GPO Box 389, Adelaide, SA 5001

To this end, would like to throw this column open to suggestions as to what incentives and techniques can be used to upgrade the image of CW operation among those who should be worthy candidates for the brotherhood.

Some of the ideas which are worth considering are awards and certificates, contests, a revival of the "Key Section".

I've often thought I should prepare a handbook for CW operation based on this column, because as a beginner had a lot of trouble figuring out how things should be done. Please write and let me know if you think such a book would be useful, and if so, what you think should be in it.

On the individual side, why not make it a point to enjoy at least one CW QSO every week with an operator who is much slower?

Well, there's some food for thought. Chew it over, and if you don't get indigestion, drop me a line with a suggestion or two (even rude suggestions will be treated as informal feedback).

Next month we'll do a wrap up on earning the code, 73 till then.

AR



THEY'RE GOING TO BURN THE IONOSPHERE

The ionosphere over Tasmania will this month (July) have a 155-mile long hole burnt in it by the space shuttle Challenger.

The hole will be created by firing the shuttle's manoeuvring motors and also spurring water, carbon dioxide and hydrogen.

This will give scientists a chance to analyse the ionosphere, and a glimpse at stars which emit radio waves that normally won't penetrate the ionosphere.

The Australian Science Department's Antarctic Division will use the test to monitor the effect of changes in the ionosphere on satellite transmissions and the earth's magnetic field.

The hole will last until sunrise when solar radiation will recharge and restore the ionosphere.

Contributed by Jim Linton VK3CP

AR

SEANET ANNUAL CONVENTION

The 15th Annual Seanet Convention will be held in Cebu City, Philippines from 22nd November to 24th November 1985. Convention headquarters will be the Cebu Plaza Hotel.

Further details may be obtained from the Net at 1200UTC on 14 320MHz or from the Cebu ARL Inc, Box 304, Cebu City, Philippines.

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PACKET RADIO

David Furst VK3YDF
57 Lairy Street, Richmond, Vic 3121

PACKET RADIO IN TURMOIL?

Letters have been received from Jon Bloom K3Z of the ARRL and Lyne Johnson WA7GXD of Tucson Amateur Packet Radio (TAPR) in response to my November 1984 article. I apologise for not answering these letters sooner and trust that the following will be sufficient answer to this correspondence.

The gist of the arguments raised by both American letters was that the AX.25 protocol is superior to the Vancouver protocols, that anyone using the Vancouver protocols was likely to cut themselves off from the rest of the world and that the hardware standard I proposed in that article was not appropriate.

Following the above correspondence an article has appeared recently in another magazine which requires some clarification. Many of the points it raises re-litigate things said in the American letters.

I take this opportunity to write a combined reply to all the above.

In particular I feel that the magazine article has misrepresented me and my comments rather unfairly. I will not stoop to such personal attacks and I expect no less of others. To criticize a pioneer in a new field for an article published six months ago and written eight months ago is easy with the benefit of hindsight.

The magazine claims Packet Radio to be stricken by rifts, petty conflict and conflicting interest groups. It also contains many errors and inaccuracies.

Many misconceptions about the Vancouver Protocol are put forward — amongst others that it unfortunately almost set Packet Radio back enormously. Vancouver was where Packet Radio was born. It was invented and implemented by Doug Lockhart VE7APU who can be considered the father of Packet Radio. Doug still inputs all he can into the AX.25 and Vancouver projects.

One misconception appears to be that those of us who propose the Vancouver Protocol as a standard want to close Australia off from the advantages of overseas communication with AX.25 satellites, gateways, etc. We have had an AX.25 option on our systems from almost the time that AX.25 first surfaced. This is more than can be said of TAPR TNCs. The present TAPR TNC does not implement Vancouver 2. The new TAPR 'Tiny TNC' does not implement either Vancouver protocol.

I was criticised for the suggestion that the TAPR people did not make their AX.25 code available. In reality, after I made that complaint TAPR released the software and THEN stated that my criticism was invalid. At the time I wrote those comments the code was not available and it was not policy to release it. We would very much like to put the latest version of the AX.25 software onto our TNCs. Such a large part is made of how freely 'available' it all is. We've had our order in for the new software since January and it still hasn't arrived.

Much is made of how many AX.25 implementations have been released and how wrong I was about there only being the TAPR machine available. This is a distortion of my comments. There was also the GLB board available at that time. In the Melbourne group we obtained both the TAPR board and also the GLB board for evaluation before making our choices.

The Americans at that time were going in all directions and my major proposal was for a hardware standard which was easy to develop software for which would stand up for a long time. I criticised the American effort for their choice of processor for which few people could write code (the 6809).

TAPR developed their TNC and have sold over 2,000 of them. Harold Price, who developed the software which runs on it, (using an HP64000

which few of us have access to) has since become involved in so many organisations that the software development has stopped and is unlikely to re-start. TAPR don't supply these TNCs any more. It is worth noting that Doug Lockhart (of Vancouver) suggested to the ARRL that X.3 and X.25 standards be adopted for talking between TNCs and computers, which the ARRL have endorsed. TAPR have said that they'll stick with what they already have.

It was implied that the TAPR unit is cheaper than the Vancouver Unit. When TAPR still supplied it, it cost \$240 — American. First add about \$100 to account for the weakness of the Australian Dollar. Then add 5 percent duty (\$17). Finally add 20 percent sales tax (\$71) for a grand total of \$428. The Vancouver unit can be built up here in Australia for around \$200.

The Americans have followed an interesting path. Their first phase was the TAPR board. Then followed a phase where they developed lots of other boards and systems. Most recently they discovered the Xerox 820 computer and moved things across to that. A word about the Xerox 820. It has a 280 processor and runs CP/M. They did that because lots of people have plenty of experience with the 8080/280 family of processors and CP/M. Now they have released the TAPR II — their 'Tiny TNC'. It also uses a 280. My point is that I originally proposed standardising on 6809/280 family processors and that the Americans have (belatedly) shown me right by their actions. They are using battery backed up RAM, lots of CMOS components, single voltage supply, lower supply drain and have priced it under \$200. I proposed all these things in that article written eight months ago.

TAPR are not sure when this TNC will be available. They won't put you on a waiting list for it either. The Sydney Amateur Digital Communications group have already got a couple of prototypes of a new 'Australian TNC' going and they will be releasing it in August/September. It has all the above (and more). Much more, because it will talk AX.25, Vancouver V1 and V2.

Put bluntly the AX.25 proponents would like it believed that we are trying to kill off AX.25. We are not about to try to take on the might of the USA. We want an orderly development of Australian Packet Radio on hardware that the Americans themselves have endorsed. We do not believe that AX.25 is the 'be all, and all' of protocols — neither do the Americans. The 'Tiny TNC' has AX.25 mark I AND AX.25 mark II (yet another protocol). We believe that there is much work to be done in this area and we are doing it. If there are some reasonable choices of hardware made, no-one need be left behind as the technology develops. As it is, all those 2,000 owners of TAPR I TNCs appear already to have been dumped by TAPR while the owners of the original Vancouver TNCs still have very usable systems.

The magazine article makes much of the digesting possibilities of the AX.25 protocol and less admits that most of the abilities contrivance our Radio Communications Act. The wording leads to the mistaken impression that the AX.25 system allows you to do what is illegal under the Vancouver system. It does not.

Consider this: If digesting is so hot why haven't there been reports of huge networks and long distance multi-digest contacts in all the magazines? The answer is, not technical, but it boils down to the fact that on a long link you can't get a message and acknowledge packets up and down reliably. When the errors do come along the ACKs and NAKs flying up and down the system bring it to a standstill. The AX.25 system was limitations in this area which the Vancouver protocol does not. The Americans keep talking about level three (in language sounding rather like

Vancouver V2) but no code or results have been seen thus far. On the other hand many Vancouver proponents here and overseas have been working on Level 3 networking and we will likely be testing such a system by the time this article appears in print.

The article confuses the V1 and V2 protocols and is accurate about neither. It states that the address field allows only two Bytes of information which will allow only 256 addresses, that we must keep a list of who has which address, that the address field limits the amount of data, that some of us are stuck with V1 and that the Vancouver board is not intelligent.

Anyone will tell you that in two Bytes (16 bits) there are 65,536 possible addresses. V2 allocates these numbers automatically and we don't even need to know what they are. As for the address field limiting the amount of data, what about AX.25 with up to 8 fields of 8 characters? — not that this limits data either. It just allows down the channel with a lot of 'useless' information. None of us is stuck with V1, we can and do upgrade frequently. As for the board not being intelligent it just isn't so.

The magazine editor says that there is a need for more articles on the subject preferably written by someone with more in-depth knowledge of packet radio than I can claim. On the strength of the above, I can only concur.

He further claims that 'there are those who would dearly love to leave this mode shrouded in mystery. I am at a loss to know who he's talking about' for one who many talks to groups, writes articles, talk about it on the repeaters and generally spend a lot of time working for nothing when I could be in the arms of a lovely lady!

There should be some mention of the achievements of the two Vancouver oriented packet groups in Australia. The Sydney group has been testing a digital repeater for a couple of years and have been running a bulletin board for almost all that time. The Melbourne group has been running a repeater on test for six months and it is now licensed. They have been running a bulletin board for a year.

The article further states: 'In April 1982, there was not a single soul to be found in Australia who was using the new mode' (Packet Radio). Elsewhere it says 'Packet radio had its Australian beginnings in Sydney in the early '80s'. Which is it Sir? The Sydney Amateur Digital Communications group was certainly going at that time.

Further, there are only two groups of Packeters. Those who want only AX.25 and those of us who want Vancouver, but are writing to put the very latest and best of AX.25 into our TNCs but can't get it. The reference to 'the packers' who want nothing to do with AX.25 is simply not so.

The suggestion that the Sydney Amateur Digital Communications Group has 'splintered' with some people leaving to form the TAPR Users Group is also not so. The TAPR Users Group is an entirely new group composed of new people. They are not disenchanted members of the SADC.

I was taken to task for implying that 'AX.25 software is limited to the 6809 processor' — I said nothing of the sort.

It is suggested my complaint that the Americans did not even consider the V2 protocol as a Packet standard is unfounded because V2 was not in widespread use. Of course it wasn't it was the 'newest kid on the block'. I believe that future developments at level 3 networking will prove it superior to AX.25.

The essential difference between the AX.25 and Vancouver camps is that the Vancouver protocol was developed by Doug Lockhart VE7APU who has been involved with commercial packet communications for many years (with IBM) and can rightly be considered a pioneer in that area.

AX.25 by comparison, was designed by a committee. Lockhart's work displayed an intimate knowledge of the complications and requirements of the higher levels of packet protocols and thus ensured a sound foundation on which to build. It is my opinion that this is less true of the AX.25 protocol. My tale will tell.

I am castigated for saying that the American approach was aimed at appliance operators. I have nothing against appliance operators, however when the effort is aimed at them to the point of discouraging experimentation (which it was at that time) I have the gravest objections. It is a matter of much satisfaction that the Americans have started encouraging experimentation by individual amateurs.

Then there are the comments about me criticising the TAPR board for its 6809 processor and the consequent difficulty in software development. TAPR themselves have dumped this processor with the release of their new TNC. The information that AX.25 code will run on Vancouver TNCs is no surprise to those who own them.

Next quote: 'Furst has raised the ire of local and overseas packet users, as evidenced by the amount of mail in response to the comments made in *Amateur Radio*.' To my knowledge the only letters received were those two noted above. In fact my phone number was on that article so that people could criticise me easier. Not one phone call was received on the subject — not even from the magazine editor.

Once more: 'Lyle Johnson WATGXD, President of TAPR, responded to Furst by saying his comments were "erroneous and perhaps misleading". Johnson states that the first Tucson TNCs were developed "for about half the price" of the VADCO TNC and the "Bell 202" modem required to use it.' The operative expression in the price argument is 'and the Bell 202 modem

required to use it'. The modem was the expensive part. They should have done what the group in Sydney did when they developed a cheaper, specialised modem. Lyle Johnson continued: 'But TAPR will continue to make the (TNC) kit available'. 'Gateway' — The ARRL Packet-Radio Newsletter' of 7 May, 1985 states 'The TNC 1 is no longer produced by or available from TAPR'.

Mr Johnson goes on to say that 'there is no harm in multiple TNC designs' and criticises me for proposing another. My design standard was an old one which was based on the essential parts of the Vancouver design and put forward in the interests of maximum compatibility. I note with interest that his organisation has adopted so many of my recommendations.

Both American writers contend that development of the AX.25 standard was to remedy deficiencies in the Vancouver standard of the time and that the development of new hardware was likewise to address problems with that. Surely it would have made more sense to develop along established lines rather than chart entirely new waters by so radical a departure in both areas? By doing so they immediately created a split in the rather small Packet Radio community of the time. Neither the protocol nor the hardware justified so great a change. Without being ungenerous I can only speculate that these changes came about because someone wanted to 'Americanise' the Packet Radio which someone else had invented.

The article further states: 'What we do advocate is a rational, experimental approach that does not rule out any available option until proven one way or another.' Surely our approach of a common 'hardware bus' which can run any protocol and will not have to be thrown out if and when a 'perfect protocol' comes along is just that?

The point is made that the TAPR Users Group will have to guard against isolating themselves from the existing V2 systems. We wholeheartedly

agree and wish to point out that our repeaters will already repeat AX.25 and will continue to make such provision. Anyone who wishes to use our installations for AX.25 work is more than welcome to do so.

More 'Canada and Australia are the only countries experimenting with Vancouver protocol on a large scale and stand to isolate themselves from the rest of the world if they do not adopt a more flexible attitude.' Given all the above it strains my imagination to see just how we could be more flexible. Would you have us exclude any other technology just because the Americans don't like it?

There is a common thread of misconception throughout the article implying we won't be able to use Oscar 10, JAS-1, PACSAT and other services. 1 We do have and will continue to have AX.25 on our TNCs. 2 It is not envisaged that everyone will talk directly to a satellite, but through a 'gateway' which can translate between protocols — and you won't even notice it happening!

In conclusion the magazine recognises merit in the Vancouver approach by admitting it 'is more "time efficient" than AX.25'; that there are many 'Australian Amateurs now competent in writing software for this protocol on popular CP/M computers, that there is a high level of expertise here to develop the hardware; and that the hardware is relatively cheap to acquire and appears to be likely to become cheaper still'.

A final suggestion is that we 'should use every resource available to ensure that Australia has the best, most flexible packet system in the world'. A view many of us have dignified by working hard towards it.

I regret that this dissension has arisen. Why, oh why, don't we all go back to where the spirit of Packet Radio was a year ago when we all knew what we were talking about, not bickering, but working towards a common goal?

AR

RADIO EXPERIMENTER'S HANDBOOK



This first volume is 132 pages chock-full of circuits, projects to build, antennas to erect, hints and tips. It covers the field from DX listening to building radio-teletype gear, from 'twilight zone' DX to VHF power amplifiers, from building a radio FAX picture decoder to designing loaded and trap dipoles. This book carries a wealth of practical, down-to-earth information useful to anyone interested in the art and science of radio. Your copy is available by mail order for \$7.95 plus \$1 to cover postage and handling (add \$5 to these charges for air mail postage outside Australia) from:

Federal Marketing
P.O. Box 227
Waterloo, N.S.W. 2017

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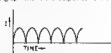
EDUCATION NOTES

Brenda Edmonds, VK3KT
FEDERAL EDUCATION OFFICER
56 Baden Powell Drive, Frankston, Vc 3199

TRIAL AOCF EXAMINATION

Select the correct alternative

1 The graph shows the output current of a:



- a balanced modulator
- b full-wave or bridge rectifier
- c reactance modulator
- d dual voltage power supply

2 The sidebands of an FM amateur transmission:

- a should not be more than 3 kHz wide
- b occur only on one side of the carrier
- c occur at multiples of the modulating frequency
- d add to the power of the carrier

3 The SWR measured at the output of a 435 MHz transmitter is 1.1, but at the antenna it is 3.1. This may be because:

- a the antenna is resonant at 435 MHz
- b a severe transmitter to feeder impedance mismatch
- c of excessively lossy coaxial cable being used
- d the UHF SWR meter introduces a severe power loss

4 The power amplifier in a 144 MHz transmitter is driven by a tripler which is not neutralized because the:

- a low power stages do not suffer from positive feedback
- b drive circuit incorporates negative feedback
- c power amplifier provides a passive load for the tripler output
- d tripler input frequency is one third of the output frequency

5 A bipolar transistor will have a current gain of less than

- a in a common base configuration
- b in a common emitter configuration
- c in a common collector configuration
- d when used in an oscillator circuit

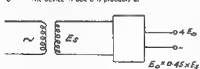
6 A step down transformer has an impedance ratio of 64:1. If the input voltage is 120 V AC, the output voltage will be:

- a about 2 volts
- b 15 volts
- c 240 volts
- d 960 volts

7 Typical amateur repeater offset frequencies in Australia for systems operating on 146 MHz and 438 MHz are respectively:

- a 600 kHz and 5 MHz
- b 3 MHz and 600 kHz
- c 600 MHz and 5 kHz
- d 500 MHz and 5 MHz

8 The device in box B is probably a:



- a filter
- b voltage doubler
- c bridge rectifier
- d half wave rectifier

9 A capacitor functions as a result of the:

- a storage of energy in an electromagnetic field
- b storage of energy in an electrostatic field
- c dielectric charge
- d accumulation of electrons on the positive plate

10 In a direct conversion receiver good selectivity is achieved by:

- a the IF stages
- b using a narrow band audio filter
- c low distortion audio amplifier stages
- d a tunable beat frequency oscillator

11 The reading on a dip meter reduces sharply when it is coupled to a circuit:

- a and is tuned to the resonant frequency of that circuit
- b because at resonance it absorbs power from the circuit

c because the impedance of a parallel tuned circuit is lowest at resonance.

12 A hot carrier diode may be used:

- a as a rectifier in a high current power supply
- b where high heat dissipation is required
- c as a rectifier at microwave frequencies
- d to replace a varicap diode for tuning at VHF

13 To check the linearity of an SSB transmitter to two tone audio test signal is applied. A sample of the transmitter's output is connected to:

- a a wave form generator
- b a sweep generator
- c the vertical deflection plates of an oscilloscope
- d an output power meter

14 Crossmodulation occurs when:

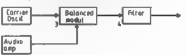
- a two signals of precisely equal input strength are received at once
- b the modulation of a strong unwanted signal is transferred to the desired signal
- c two transmitters are operated in close proximity to each other
- d signals are rectified in the receiving antenna

15 HF multiband transmitting antennas should preferably be used with an antenna tuning unit to reduce the:

- a radiation of harmonics
- b angle of radiation
- c height of the antenna
- d the maximum deviation commonly used in amateur FM transmitters at 144 MHz is:

- a 5 MHz
- b 10 MHz
- c 15 kHz
- d 5 kHz

17 The frequencies which occur at significant levels in the output of block 3 should be:



- a All RF sum and difference of AF and RF
- b AF and RF only
- c sum of AF and RF only
- d sum and difference of AF and RF

18 A receiver's ability to reject unwanted signals is limited by:

- a crossmodulation of weak adjacent frequency signals
- b the skirt response of the selectivity circuits
- c generation of harmonics at the transmitting station
- d AF distortion products generated in the detector stages

19 A 5/8 wavelength vertical antenna is:

- a does not require earthing of the radials
- b may use a loading coil to make it an electrical 3/4 wavelength
- c has a higher angle of radiation than a 1/4 wavelength vertical antenna
- d uses as built-in capacitance to reduce it to an electrical 1/2 wavelength

20 A solid state device having four semiconductor layers but only three terminals could be a:

- a NPN bipolar transistor
- b bridge rectifier
- c silicon controlled rectifier
- d dual gate FET

21 The 'skip' distance at HF will depend on the:

- a radiation angle and virtual height of the ionosphere
- b frequency of local weather changes
- c conductivity of the surface over which the wave travels
- d height of the ionosphere

22 An electric microphone works on the principle that:

- a external bias is required
- b its changing capacitance will alter the input frequency
- c a permanent electric charge on the plates provides bias for the amplifier
- d sound waves cause its capacitance to change with consequent output voltage variations

23 The addition of extra elements to a Yagi antenna will result in increased:

- a side lobe radiation
- b forward gain
- c SWR

24 A voltage measuring device incorporates a diode in its probe. It is likely to be used to measure:

- a very high pulse voltages only
- b DC voltages
- c RF voltages
- d very low AC voltages only

25 The rating of a diode in a transmitter power supply should be approximately:

- a 3 to 5 times the expected current
- b twice the power output of the transmitter
- c 1.5 times the current used in the output stage
- d 10-20% higher than the expected current

26 In a transmitter using low level modulation:

- a no audio amplifier stage is used
- b all subsequent amplifier stages must be linear
- c the oscillator output must be low
- d the modulation is applied to the buffer stage

27 To calculate the DC input power to the first stage of a transmitter it is necessary to know the:

- a cathode current
- b control grid current and screen grid voltage
- c screen grid current and cathode voltage
- d anode current and anode voltage

28 A common application for a field-effect transistor is:

- a in high voltage, high current power supplies
- b to control the series current in a regulated DC power supply
- c as a high impedance input amplifier
- d as a linear generator for high fidelity reproduction

29 The specifications for a device state, in part, -20 dB queuing with 0.25 V input signal. This refers to the:

- a image rejection by a superhetrodyne receiver
- b sensitivity of an FM receiver
- c carrier suppression in a SSBSC transmitter
- d quality of the noise limiter in a direct conversion receiver

30 To subdivide the output of a 150 V DC power supply we could use:

- a a gaseous regulator tube
- b five 30 V zener diodes in parallel
- c a voltage divider network
- d a choke input filter

31 An unusable output at VHF from a 3.5 MHz transmitter could be:

- a excessive harmonics
- b rectification in the antenna
- c an oscillating power amplifier stage
- d mixing with RF from a nearby television receiver oscillator

32 One difference between Class AB 1 and Class AB 2 amplifiers is that:

- a Class AB 2 amplifiers need less driving power
- b Class AB 2 amplifiers operate without any standing anode current
- c grid current does not flow in Class AB 1
- d two valves in Class AB 1 in push-pull will cancel out odd harmonics

33 The type of oscillator shown is a:

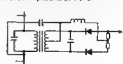


- a Hartley
- b Colpitts
- c Armstrong
- d Clapp

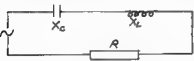
34 To prevent direct radiation of interference from an amateur transmitter it is important to:

- a check the SWR at the transmitter output
- b ensure that the transmitter is adequately screened
- c install an antenna tuning unit in the feedline
- d monitor the output on a spectrum analyser

35 This circuit represents part of a:



- a frequency doubler
b product detector
c PM discriminator
d full wave power supply
36. A multiband dipole can be fed with a single transmission line because
a this produces a more omnidirectional radiation pattern.
b each dipole presents a high load impedance at other than resonant frequencies
c this produces a uniform vector radiation pattern on all bands
d a ten metre dipole can act as a matching stub for the longer dipoles
37. Ground wave propagation
a is not possible across large bodies of salt water
b can be carried out over longer distances on HF than on VHF
c will vary according to the time of day and the sunspot cycle
d can only be used for vertically polarised transmissions.
38. In this circuit the total impedance (Z_T) is given by the formula $Z_T =$



- a $X_C + X_L = R$
b $R = X_L - X_C$
c $\sqrt{R^2 + X_L^2 - X_C^2}$
d $\sqrt{R^2 + (X_L - X_C)^2}$

39. An advantage of the point-contact diode over the junction diode is that:
a it does not require high purity semiconductor material
b it can be manufactured in a smaller package
c the lower capacitance allows operation at higher frequencies
d temperature sensitivity is higher
40. An HF amateur transmitter may produce spurious emissions at VHF. The cause can be identified by using a
a sensitive variable absorption wavemeter
b nearby television receiver
c RF power meter
d RF voltmeter
41. Inductances of 20, 30 and 60 Henries are connected in parallel. Ignoring mutual inductance the total will be
a 110 H
b 110 mH
c 37 H
d 37 mH
42. Mirror crystals are often used to
a allow simultaneous transmission on several harmonically related frequencies
b calibrate receivers at the band edges
c check for overmodulation
d calibrate the SFO.
43. A filter has several series and parallel resonant circuit combinations. It is probably a
a high pass filter
b low pass filter
c band pass filter
d mechanical filter
44. When an alternating voltage is applied to a capacitor, the relationship of the voltage to current is
a 90° out of phase, current leading
b 90° out of phase, voltage leading
c 180° out of phase
d in phase at all times.

45. Hysteresis losses in an iron-core transformer are due to
a the resistance of the wire of the coils
b localised electrical currents in the core
c the extra bulk of the insulation of the coil wires
d the opposition to a change of the magnetic state of the core
46. The "D" layer of the ionosphere
a is more dense at night than by day
b absorbs HF signals more than HF signals
c is the layer furthest from the earth
d is present only at the peak of the sunspot cycle
47. As a safety precaution, before working on a transmitter which has recently been used, it should be disconnected from the m.a.s. and:
a have the microphone removed
b have the fuse removed
c the power supply capacitors should be discharged
d the transmitter earthing strap removed
48. The standard colour coding for 240 VAC power leads in Australia is
a active and earth blue
b neutral blue, earth brown
c active brown, neutral blue
d neutral brown, earth green and yellow.
49. A temperature inversion causes
a the air temperature to increase with an increase in altitude
b ionization along a cold front
c improved HF propagation
d VHF signals to be trapped above the inversion layer
50. The actual output frequency of a fifth overtone crystal oscillator may be:
a exactly 5 times the crystal frequency
b one fifth of the crystal frequency
c slightly offset from the fifth harmonic of the fundamental crystal frequency
d adjustable over a 30% range of the fundamental crystal frequency.

INTRUDER WATCH



Bill Martin, VK2COP
FEDERAL INTRUDER WATCH CO-ORDINATOR
33 Somerville Road Hornsby Heights, NSW 2077

It was interesting to note, as I looked through some Intruder Watch figures lately, that, for the last three years, most intruders were reported in September of each year. I can't guess what this means. We can't assume that intruder activity is greatest in that month, as it may be that OBSERVER activity is greatest in September. I favour the latter theory and suspect that, with the coming of Spring, and the temperatures in the various shacks becoming more conducive to radio activity, more observers are doing more monitoring than in colder months.

THANKS TO OBSERVERS

The time-lag between processing all the reports received and the lead-time for this column means that thanks to contributing observers are very often belated. However, if you keep that in mind, I now take the opportunity to say thank you to those who sent in reports for February last. VK2BQS, VK2DAT, VK2DEJ, VK2PS, VK2PWS, VK2QL, Arthur Bradford (SWL), VK3PIW, VK3BX, VK3XU, VK3YF, VK4AJO, VK4BS, VK4BHJ, VK4VFG, VK5AJO, VK5BJF, VK5GZ, VK7RH, VK8HA.

With Spring only a few weeks away, when the shacks will start to warm up, wouldn't it be nice if some more amateurs and SWLs sent in some reports of intruders they hear on the amateur bands? There are plenty to choose from, and I'm sure that the above-mentioned workers wouldn't mind at all if others lend a hand.

NEW CO-ORDINATOR

News has come that we have a new IW Co-ordinator in the ACT Division. Ray Roche VK1ZJR, PO Box 61, Campbell, ACT 2601, has taken up the challenge and we offer a warm welcome Ray to the ranks of intruder watchers. Any reports from the VK1 area can now be sent direct to Ray.

RE-PRINTED HANDBOOK

Recent enquiries reveal that the new edition of the "Amateur Operators' Handbook" was in fact printed, and was available at the Government printing office, but was subsequently withdrawn from

sale due to printing errors. However, by the time this column appears, all should be rectified, and the publication should be back on the shelves (a re-printed edition). This handbook is a must for every Amateur Shack, and, of course, the aspiring amateur licensee must have a copy to study the regulations, not only to obtain a pass mark in the regulations examination but to acquaint him/herself thoroughly with the regulations in force at the time so as to save embarrassment on air. That may save them the panic I went through on one occasion, when, as a Novice licensee, a JA asked me to QSY up the band, which I did, and when I realised I had moved up right out of the Novice segment, I was back in about a micro-second!

LEND-A-HAND

A special appeal goes out this month to VK7 amateurs and SWLs to lend a hand with intruder watching. If you have any enquiries in VK7 re the IW, drop a line to Robin VK7RH (QTHR), the Tasmanian Co-ordinator, who will assist you to assist us to assist you (what?). Robin is waging a lonely war against intruder stations from down south, and could do with some help. Athol VK7LR is helping, but what about some others chipping in. I have the worked 100 Tasmanian Devils Award, so I KNOW there are more active amateurs in Tassie than Robin and Athol. What about making it a Club project for, say, one month, to see what you can come up with?

DISTURBING NEWS

Disturbing news to hand that a ship, currently in the Marshall Islands (at the time of writing), is passing commercial traffic in the AMTOR mode on 14.069 MHz, and that two American amateurs are involved. This is disappointing news, and we hope that the FCC will get something done about it. I have been in touch with the Region 2 IW Director in Washington, and hopefully he will be able to get moving on the matter.

Well, that's about all for the month, see you next time, and let's all try to band together and use

kinetic energy to get the solar cycle to get moving upwards!

MAGAZINE REVIEW

Roy Hartkopf, VK3AOH
34 Teeling Road, Alphen npton, VIC 3078

(G) General (C) Constructional (P) Practical without detailed constructional information (T) Theoretical (N) Of particular interest to the Novice.

HAM RADIO, March 1985. Radio Astronomy (G N.) Harmonic Signal Mixer. (P) Low Voltage Power Supplies. (PN) Rhombic Antennas. (T) List of VHF/UHF Publications. (C)

SATELLITE JOURNAL, April 1985. General News. Beginner's Guide. Index of Co-ordinators. (G)

RADIO COMMUNICATION, May 1985. Cumulative Index, 1980-84. (C) VHF/UHF Front End Design. (T)

73 MAGAZINE, April 1985. Low Noise 2m preamp. (P) Ishmod's Journal. (AF) Rubber Duck "Hatenna". (P) Commercial RTTY. (G)

73 MAGAZINE, May 1985. Specia. Antenna Issue, including HF Band Discone Antenna. (G)

QST, April 1985. Variable Reference Oscillator. (P) CW Demodulator. (P) Resonance. (N)

BREAK IN, April 1985. Annual reports and remits. (G)

WORLD RADIO, April 1985. World Radio News. Turkey's first Amateur New Products. Satellite News etc. (G)



ALARA

Australian Ladies Amateur Radio Association

Margaret Loft, VK3DML
28 Lawrence Street, Castlemaine, Vic 3450

Well this is ALARA's big month when we reach the grand old age of TEN YEARS, what a milestone and certainly one the founder of ALARA can be justly proud of.

At our get-together at Mildura last September Norma was presented with a bouquet and I quote her reply "ALARA started because I was bored. Too many old ladies. There weren't enough old ladies and there weren't enough young ladies either, they were all men. It was a traditional old story, when you visited an amateur where do you go? You go to the shack with the fellas, or into the kitchen with the ladies, so I thought we had better do something about it and try to get the ladies together. The original idea wasn't necessarily that all the ladies get their licence, but somehow or other that got changed. The idea was to all get together and have family outings, the ladies and men together, and have a good time. I am very proud to see what has turned into."

CELEBRATIONS

VK3 Is having a Luncheon at the Moorabbin Radio C-rooms, Turner Road Reserve in Highett from 11.30 am on Saturday 27th July.

Please bring a plate of food to be shared; cutlery and crockery. Tea and coffee will be provided. Please notify Bron VK3NTD for further details.

VK4 Are also having a luncheon at Redcliffs on Saturday 27th July, details from Margaret VK4AOE or Josie VK4VAN.

VK6 Lunch was on 21st June as this suited the YLs better than July.

We come to a new member — Lynda Francis from WA, the daughter of Poppy VK6YF.

On a sad note ALARA has lost three members this year; condolences are extended to the families of Margaret VK2AHD, Verle VK2MR and Valerie VK4FKL.

ALARA CONTEST MANAGER

Mariene VK2KFQ has offered to wear the hat of contest manager for the incoming committee. My thanks to you Mariene for your offer and I do hope you enjoy your involvement with the task.

AGM

Most positions for the new committee are filled now, but please, if you feel you can help in any way, write to Jenny VK5ANW and offer, new ideas and new faces are always welcome.

MINI CONTEST

To coincide with our tenth birthday on the 6th July activity day, a mini contest is being held.

Contacts to be on the novice section of 80, 15 and 10 metres.

Phone and/or CW may be used.
YLs to contact YLs only (not necessarily ALARA members).

Each station can be worked ONCE ONLY.

A special mystery prize will be awarded to the YL who has had the greatest number of contacts (if a draw the YL with the most prefixes wins).

Send your log to Contest Manager VK2KFQ, 31 Cadell Street, Wentworth, NSW 2648 by 27th July 1985.

This will be my last report for ALARA in AR. After nearly 5 years it is a sad day for me, but it is time someone else has a say for you.

My very sincere thanks to all who have helped me with the column. To those who produce AR the best of luck in the future, the magazine is a credit to you all. I am going to sit back and look forward each month to what our next Publicity Officer has contributed instead of looking to see if my column turned out the way it was intended.

A lot of love to you all

33/3/88

LIST OF MEMBERS AS AT 21ST MAY 1985

NAME	CHARNAME	Joining Date	VK4VR	Val	7 Apr 83
VK1NEJ	Charlene	21 Feb 82	VK5ANW	Jenny	21 Apr 76
VK2ACP	Kathleen	1 Oct 80	VK5AOV	Meg	26 Nov 83
VK2DIX	Joyce	22 Jul 80	VK5BHV	Joyanne	30 Mar 87
VK2DJO	Norma	20 Aug 75	VK5BYL	Judy	20 Apr 82
VK2DVL	Beryl	11 Aug 79	VK5LM	Lorraine	4 Apr 76
VK2EER	Joy	25 Jan 80	VK5PWA	Carol	14 Jun 83
VK2HD	Heather	22 Oct 76	VK5QO	Mariene	12 Feb 81
VK2KFK	Mariene	11 Nov 83	VK5YJ	Joy	14 Jul 79
VK2KYL	Betty	9 Mar 81	VK5YL	Denise	20 Apr 76
VK2MI	Joyce	5 Nov 76	Pauline Keon		24 Dec 83
VK2MV	Margaret	20 Mar 82	VK6DE	Bev	2 Mar 80
VK2NKN	Maree	6 Aug 81	VK6HI	Helene	23 Nov 83
VK2NVQ	Dorothy	17 Mar 83	VK6KYL	Diane	14 Jul 79
VK2PNG	Margaret	23 Mar 81	VK6AMH	Bobbie	14 Dec 76
VK2PSC	Suzanne	20 Oct 82	VK6ANU	Sue	2 Oct 80
VK2PLS		6 Oct 77	VK6GV	Inge	31 Mar 85
VK2SU	Freda	26 Jul 80	VK6QL	Trish	3 Dec 84
VK2VQK/VKD	Wendy	20 Mar 82	VK6QM	Margaret	21 Jun 80
		23 Nov 83	VK6YL	Poppy	3 Jul 78
VK3AGO	Lorrie	6 May 79		Gillian	15 Sep 76
VK3AYL		17 Mar 83	*Olive Couch		21 Oct 77
VK3BR	Mavis	23 Aug 75	Daphne Hoo		25 Aug 80
VK3BR	Joan	2 Aug 76	*June Greenaway		24 Dec 83
VK3BRE	Mona	1 Sep 76	Lynda Frances		13 May 85
VK3BTU	Janet	1 Sep 77	*VK6ZL	Christine	17 Dec 83
VK3BYK	Barbara	1 Feb 84	VK7CC	Christine	10 Jun 83
VK3BYL	Anne	14 Nov 76	VK7HD	Melene	29 Dec 77
VK3CVW	Valene	22 Feb 85	VK7NL	Laura	2 Feb 84
VK3CWA	Margaret	25 Mar 81	VK7ZSU	Sue	25 Aug 79
VK3CYL	Kim	8 Nov 83	VK8NL	Sirisi	1 Jun 80
VK3DML	Margaret	8 Jun 77	DF1EV	Christel	11 Dec 82
VK3DMS	Marilyn	24 Oct 77	DF1TE	Christa	15 Sep 79
VK3DVT	Valda	25 Mar 81	DF2SL	Anny	15 Sep 79
VK3DYL	Gwen	20 Apr 81	DF3LL	Hendi	12 Mar 83
VK3HQ	Marijone	3 Oct 76	DF5TT	Margot	1 Nov 81
VK3KS	Mavis	22 Aug 75	DF8EK	Paula	1 Nov 87
VK3NML	Joan	19 Oct 81	FK8FA	Almee	22 Oct 84
VK3NMA		17 Nov 76	JA1AEQ	Fumi	21 Sep 84
VK3NTD/XTD	Bron	6 Nov 82	JH1GMZ	Akiyo	6 Feb 85
VK3PBL	Bonnie	11 May 83	JH1VLV	Nanako	8 Jul 84
VK3PEH		26 Nov 82	JH1VLV	Hissako	25 Oct 83
VK3PP	Alma	4 Mar 85	JH3WVW	Sayoko	1 Sep 82
VK3PRC	Judy	29 Mar 84	JH6KYP	Ettsuko	14 Jan 85
VK3LUE	Clarice	29 Oct 76	K1JIV	Jean	23 Mar 81
VK3VAN	Jessie	12 Feb 81	W1JUV	Karla	10 Dec 79
VK3VBK	Joyce	17 Mar 79	W2GLB/7	Phyllis	23 Jul 76
VK3YL	Austine	5 Apr 76	W8ZYB	Christine	1 Jun 78
Jean Truebridge		3 Aug 75		(other callsign VK2ASZ)	
Kate Duncan		11 Aug 75			
Raele Fowler		16 Nov 76			
Muriel May		9 Jun 79			
Bronwyn Lewis		2 Oct 80			
Rita Asbury		26 May 83			
Alice Cain		9 Oct 83	K3C3EO	Jeanne	19 Jan 84
Jean Shaw		12 Dec 83	W3CQD	Liz	1 Nov 76
Edna Sandford		17 Feb 85	W3HUP	Mary Ann	6 Oct 81
VK4ACJ	Sandra	22 Jul 80	W3CQN	Ruthanna	30 Mar 81
VK4ABM	Chris	14 Jul 79	W3FEQ	Liza	19 Oct 83
VK4AOE	Margaret	10 Oct 80	W4ASRD	Edith	17 Oct 79
VK4ATK	Connie	1 Sep 82	K3AVK	Charlotte	20 Feb 82
VK4BDH	Dulcie	6 Jan 81	K3SL	Carol	11 May 83
VK4BSQ	Wendy	2 Mar 82	W5FQK	Darlene	16 Jan 85
VK4FAB	Anne	12 Jun 81	K6INK	Jennie	9 Jun 79
VK4FFQ	Lori	27 Jun 84	K6G6	Joanne	16 Oct 82
VK4JFA	Phyl	12 Jan 81	K6GCLL	Mary	22 Oct 84
VK4NAM	Dorothy	21 May 76	N6GGR	Mazone	28 Dec 82
VK4NEZ	Heather	16 May 83	W6GOET	Jessie	17 Jan 84
VK4NNN	Valene	21 Aug 79		(other callsign VK3BCO)	
VK4PZ	Mary	9 Mar 81	K7CRO	Martha	2 Mar 82
VK4QW	Cecily	9 Sep 83	KD7RA	Gerry	19 Jan 84
VK4VNM	Josie	27 Feb 85	KD7SH	Alice	26 Apr 84
VK4VNM	Jill	8 Oct 84			

KD7YB K7FF KQ7Y N7XYF	Joan Jen Shirley Denise	11 Apr 83 20 Dec 76 1 Oct 80 22 Nov 82	GM4UXJ GM6KAY LABUW	Anne Kay Karen	23 May 84 17 Dec 84 20 Feb 84	ZL1BOR ZL1FV ZL1MY ZL1OC	Lesley Cair Stanley Victoria	11 May 80 6 Nov 83 20 Nov 83 11 Sep 77
K8BRT KM8E WD8MEV	Lee June Shirley	2 Oct 80 10 Feb 85 1 Feb 84	PA3ADR PA0HIL PR2Y	Agnes Hil Inge	12 Jan 81 12 Jan 81 23 Jan 84	ZL2ADK ZL2APF ZL2AZ ZL2BQ	Cathy Alma Biny Jo	30 Dec 82 17 Oct 84 Jan 81 1 Nov 81
K9RXK G3HCQ G4FY G4EZI G4JMT C4KVR G4OUZ G4VFC Jeanette Arter	Ann Sheri Ann Diana Rae Cilla Joy Dree	22 Aug 83 20 May 81 28 Mar 81 19 Dec 78 8 Mar 84 1 Nov 81 17 Dec 84 17 Dec 84 17 Dec 84	VE6AUP VE7YL VE7CBK VE7CR VE7XYL YB8JW	Hallie Elizabeth Bobby Rae Diana Junia	1 Oct 80 1 Oct 79 28 Oct 78 28 May 78 30 Jan 82 6 Feb 85	ZL2BOA ZL2BOD ZL2BOV ZL2CP ZL2QW ZL2QY ZL2ZG ZL2ZV	Marilyn Jeanne Anne Lynn Pauline Pearl Gail Carol	16 Sep 84 26 Dec 82 23 Jan 84 25 Dec 82 4 Nov 83 22 Oct 76 17 Jan 85 30 Oct 83
GM4LLS	Shirley	20 Dec 80	ZL1ALE ZL1ALK ZL1BDZ	Aola Celia Clarrie	12 Dec 79 1 Nov 81 18 Mar 77	Z56GH Z56VH	Diane Pat	1 Jun 78 20 Nov 83

SPOTLIGHT ON S W L i n g

Robin Harwood, VK7RH
5 Helen Street, Launceston, Tas 7250



There has not been too much to get excited about this past month. Band conditions have been very poor and unpredictable with the occasional blackout severely disrupting communications on HF. One might think that the unexpected appearance of Radio Greenland in mid-April on 13.797 MHz with reduced carrier USB. It was carrying a news programme in a Nordic language — Danish I would presume, as there were actualities from Tel Aviv. I think that the programme material would have originated in Copenhagen as Greenland's population is not that large, although in the atlas Greenland appears large, it really is because of the distortion of land masses around polar regions on the Mercator Projection. You can see it's true size on a globe.

STATIC LEVELS DOWN

Because of the lack of activity on the higher frequencies, I have been listening down in the tropical allocations between 2 and 6 MHz. The static levels have diminished now and I have been observing some interesting Latin American and Asian signals in our local evening hours. Unfortunately as well, there seems to be a corresponding increase in the amount of utility services using these frequencies, because of the lack of HF propagation. This has made reception even more difficult. When you appreciate that the majority of broadcasters down there use low to medium power, you do especially find it difficult to positively identify a station, as there are local languages and dialects spoken plus there are several stations sharing the same channel.

Another complication has encountered is the presence of several international broadcasting stations, such as Radio Beijing and Radio Moscow in these tropical allocations, which are primarily allocated for local domestic coverage. Both stations have been observed in Japanese and Korean. I have even observed Beijing broadcasting in English around 1200 UTC in the 60 and 75 metre allocations. The frequency was not announced at the microphone nor mentioned in the schedules. However the 75 metre allocation (3.900-4.050) is used within Europe and Asia but not in the Americas.

SURPRISE!!!

And taking of interest outlets, I came across Radio Australia on one of the regular 49 metre channels at 0400 UTC. It was quite strong and unusual because Radio Australia doesn't employ the 49 metre allocation in the local day time. I think that they could have been using Lyndhurst and not the Carnarvon site which normally is on 6.080 MHz. The VOA was in various European languages underneath from their Wolferton (UK) base. I don't think it was a scheduled

transmission as there was no acknowledgement at the microphone of the frequency's use. I guess that they were experimenting to see what propagation was like on 49 metres at that time.

UNIDENTIFIABLE

Around mid-winter, it has been usually possible to hear signals coming in from Europe across the Antarctic regions at midday locally. So far this year, I am hearing several carriers yet the modulation appears well down. There is a characteristic flutter, indicative of a polar path present on the carriers. Perhaps by mid-June, I will be able to identify them.

At present, I am hearing stations broadcasting to North, Central and South America around 0200 UTC which corresponds to our local midday. Signals on the 25 and 31 metre bands have been particularly good. Another unusual propagational occurrence has been the presence of several Pacific Island broadcasts on the 41 metre band during the daytime. Noumea has been heard around 0200 UTC on 7.170 as well as Vanuatu on 7.260, which quickly disappears when the Europeans dominate the channel.

There were several live broadcasts of special events during May First off, we had a description of the May Day Celebrations in Red Square in English and other languages. Then on the 8th May, better known as VE Day, the BBC World Service carried live the Service of Remembrance from Westminster Abbey. Then the next day, the Soviets had a big Military Parade in Red Square and R. Moscow had descriptions over their World Service on the 41 metre band during the daytime. Apparently the USSR regard 9th May as VE Day.

The BBC World Service has been experimenting with a new audio processing system called OPTIMOD. This new system aims to equalise audio used and is not like the compression system they used previously.

Then you could hear the announcer in between phrases drawing in breath, or the sound effects would drown out the dialogue on a sports description or play. The new system appears much better and easier to listen. Now I would only wish Radio Moscow reduce its compression on its modulation. It sounds lessened and artificial with no depth. The audio is better on their Domestic Feeders on 558 than it is on the normal DSB (AM) signals, particularly on music programmes.

Well, that is all for this month. I hope to work many of you to obtain my 75th Anniversary Award. Next month, I will have a report on the Australian Radio DX Club's "DXPO" that I attended last month. Until next time, the best of 73 and good listening. Robin.



TRANSCRIPT OF JOTA TAPE

JOTA information for broadcast on Sunday, 26th May 1985 from Stan Ellis VK2DDL, JOTA Co-ordinator for 1985 for Central Sydney Area of the Scout Association

The Scout Association's hop nag, this year, to see a much greater response from Scouts, GJes and amateurs to Jamboree-On-The-Air. We feel that, in International Youth Year, amateur radio offers a great opportunity for Scouts and Guides around the world to make contact.

The Scout Association has set up groups of JOTA Co-ordinators at Area and District levels to assist with the WIA, and, in particular, the Initiatives, JOTA Co-ordinator, John Bunn VK2ND.

We ask any amateur who can spare the time to participate. Although, JOTA's still some months off we would like to see amateurs and Scout Groups, or Districts, meeting to arrange for the siting of JOTA stations and also for preliminary instruction of Scouts and Guides in operating procedures.

A suggestion is that groups of two or more amateurs visit Scout and Guide meetings and demonstrate procedure, as well as giving some details of the history of amateur radio. It has been found in the past that many of those participating in JOTA, when confronted for the first time with a microphone, become tongue-tied, and contacts degenerate into much giggling and incoherent noises. This does not enhance either the Scouts' Guides' or amateurs' appreciation of the event, and can be avoided if some familiarisation with the art of communicating is provided. A very effective way of providing training in procedure is by the use of intercom units or tape recorders. Intercom units, particularly those FM units which operate over the mains, offer a very easy means of demonstration under conditions which closely approximate push-to-talk operation.

Communication is becoming an increasingly important aspect of Scout training. We hope, in the future, to see more and more amateur stations permanently installed at Scout huts. For many Scouts and Guides the first contact they have with amateur radio is at JOTA. The willingness of amateurs to introduce them to their hobby can often result in the awakening of an interest which will continue for many years.

Any amateur willing to assist with JOTA has only to advise John Bunn on 02-772-3437 giving his or her name, address and call sign. This information will be passed on to the Scout Association who will arrange for a District Co-ordinator to make contact and arrange for a meeting where facilities, a suitable station location and any other necessary arrangements may be discussed.



CONTESTS



Ian Hunt VK5QX
FEDERAL CONTEST MANAGER

P.O. Box 1234, GPO, Adelaide, SA 5001

CONTEST CALENDAR

JULY	
6-7	Venezuela Phone Contest
13-14	International QRPP Contest
13-14	IARU Radiosport Championship
13-14	Contest 180 55B Contest
13-14	Colombian DX Contest
20-21	The Sunshine State Jack Files Memorial Contest (Rules 'AR' June 1985)
20-21	Venezuela CW Contest
20-22	CQ WW VHF Contest
27-29	County Hunters CW Contest

AUGUST	
10-11	European CW Contest (Rules this issue)
17-18	REMEMBRANCE DAY CONTEST (Rules this issue)
17-18	SARTC RTTY Contest
24-25	All Asian CW Contest (Rules June 1985)
24-25	SARTC RTTY Contest

SEPTEMBER	
14-15	VK NOVICE CONTEST
14-15	European Phone Contest (Rules this issue)

OCTOBER	
5-6	VKZL OCEANIA PHONE CONTEST (Not yet confirmed)
12-13	VKZL OCEANIA CW CONTEST (Not yet confirmed)
16-17	CQ WW DX Phone Contest

NOVEMBER	
23-24	CQ WW DX CW Contest

CERTIFICATES

As I write this, action is still in hand to complete the issuing of all the certificates and overcoming the backlog of same. My plans have gone a little astray regarding this matter and I had sincerely believed that I would have had it all cleared by now. So, please be patient for just a little longer. I can assure you that you have not been forgotten.

REMEMBRANCE DAY CONTEST

This is the biggest of our contests for the year. There are quite a few rule changes, many of which have been previously intimated, and I would suggest that you read the rules carefully. Hopefully there are no ambiguities or mistakes in same.

The weight ring factors to be applied for the 1985 Contest with respect to each WIA Division are as follows:-

VK1 - 1.08, VK2 - 7.81, VK3 - 5.96, VK4 - 5.83, VK5/6 - 1.31, VK6 - 1.26, VK7 - 1.27

I would like to thank Ron Henderson VK1RH for his assistance in calculating the figures from the data available from the 1984 contest and providing same to me. I still have some reservations as to the method used in deriving the formula to determine the winning Division and I mentioned this fact in my Annual Report to the Federal Convention. I trust that there will be some continuing discussion on this subject but would not like to mess with the current system until the matter has been more closely studied. It is a much more complicated matter than may appear at first glance.

CONTEST DATES

Following my Annual Report to the Federal Convention and discuss on of same by the Federal Council my recommendations regarding the change of dates for the John Moyle Memorial Field Day and the VK Novice Contests were accepted. It is too late

now to be able to do anything about the VK Novice Contest date so we will have to wait until 1986 before that can be sorted out. As you can see by the Contest Calendar published above it will still be held this year in September sandwiched in between the Remembrance Day and VKZL/Oceania Contests.

The Convention agreed that the date for the Field Day Contest could be moved to as late as the end of March. It may interest you to know that I am in correspondence with the ZL Contest Manager Jack White ZL2GX on this subject. The New Zealand boys would like our Field Days to continue to coincide as has happened on occasion in the past, so I hope that we can come to some suitable arrangement on this.

There seems to be a large amount of material for the Contest Column this month and it is that season of the year when my work as Contest Manager will be hotting up. I also have a very heavy commitment in other areas as well so the column may be a little sparse in the way of editorial comment and news for several issues. However, do not let this deter you from sending letters of comment and suggestion. They are always welcome, the more comment and discussion the better for all concerned.

REMEMBRANCE DAY CONTEST 1985

This contest is held to commemorate those amateurs who died during the Second World War and is designed to encourage friendly participation between all amateurs and to help in the improvement of operating skills of all participants.

This contest is held annually during the weekend nearest the 15th August, the date on which hostilities ceased in the South-west Pacific area.

The contest is preceded by a short opening address by a notable personality which is transmitted on various WIA frequencies during the 15 minutes immediately prior to the commencement time of the contest. As part of this opening ceremony a Roll Call of names of those amateurs who paid the Supreme Sacrifice is read.

A perpetual trophy is awarded annually for competition between Divisions of the Wireless Institute of Australia. It is inscribed with the names of those Australian amateurs who made the Supreme Sacrifice and so perpetuates their memory throughout amateur radio in Australia.

The name of the winning Division each year is also inscribed on the trophy and in addition the winning Division will receive a suitable certificate.

OBJECTS

Amateurs in each VK call area will endeavour to contact other amateurs.

1 In other VK Call Areas, P2 and ZL on bands 1.8 to 30 MHz, (except the 10 MHz, 18 MHz and 24 MHz bands)

2 In any VK Call Area, including their own, P2 and ZL on bands above 52 MHz, and as indicated in Rule 5.

CONTEST PERIOD

0800 UTC 17th August 1985 to 0759 UTC 18th August 1985. All Australian amateur stations are requested, as a mark of respect, to observe 15 minutes silence prior to the commencement of the contest. It is during this period that the Opening Ceremony Broadcast referred to above will take place.

ENTRIES

1 There will be TWO CONTEST CATEGORIES:
(a) HIGH FREQUENCY (HF) for operation on bands below the 52 MHz Band

(b) VERY HIGH FREQUENCY (VHF) for operation on bands from 52 MHz and upwards.

2 In each Category there will be THREE SECTIONS:

(a) Transmitting Phone

(b) Transmitting CW

(c) Receiving.

Modes applicable to each section are as follows:-

(a) AM, FM, SSB, TV

(b) CW, RTTY

(c) Rx A or B.

3 ALL AUSTRALIAN AMATEURS (VK Call signs) may enter the contest whether their stations are fixed, portable or mobile. Members and non-members of the Wireless Institute of Australia are eligible for awards.

4 CROSS MODE OPERATION is permitted. CROSS BAND operation is NOT permitted excepting via a satellite repeater.

SCORING CONTACTS

(a) ALL CONTACTS SCORE ONE POINT.

(b) On all bands a station on another call area may be contacted once on each band using each mode. That is, you may work the same station on each band on Phone, CW, RTTY and TV.

(c) On the bands 52 MHz and above, the same station in any call area may be worked using any of the modes listed at intervals of not less than THREE HOURS since the previous same band/mode contact. However, the same station may be contacted repeatedly via satellite not more than once by each mode on each orbit.

(d) Acceptable logs for all entries must show a minimum of at least 25 valid contacts.

6 MULTI-OPERATOR STATIONS ARE NOT PERMITTED (except as in Rule 7) although log keepers are allowed. Only the licensed operator is allowed to make a contact under his/her own call sign. Should two or more operators wish to operate any particular band on each will be considered as a contestant and must submit a log under the individual call sign when applies to that operator.

7 CLUB STATIONS may be operated by more than one operator but only one operator may operate at any time, ie no multi-transmission. All operators at any club station must sign the declaration on

8 CYPHERS for a contact to be valid serial numbers must be exchanged between stations making the contact. The serial number will comprise THREE FIGURES commencing at 001 for the first contact and incremented by one for each successive contact. Should the serial number 999 be reached the serial number will revert again to 001.

9 TERRESTRIAL REPEATERS: Contacts via terrestrial repeaters are not permitted for scoring purposes. Contacts may be arranged through a repeater and if successful on another frequency will count for scoring purposes. The practice of operating on repeater frequencies in simplex mode is not permitted.

10 PORTABLE OPERATION: Log scores of operators located outside their allocated call district will be credited to that call area in which the operation takes place, eg VK5XY2. His score will be added to the VK2 Division scores.

11 ENTRIES: A log of all contacts must be submitted. This should be in the format as shown in the example and must be on one side of the paper on which

A FRONT SHEET must also be included showing the following information in this order: Category (HF or VHF) Section (Phone, CW or Receiving), Call sign, Name, Address, Total Score, Page Total.

Declaration: "I hereby certify that I have operated in accordance with the rules and spirit of the contest." Signed Date

Logs are to be forwarded to the Federal Contest Manager, PO Box 1234, GPO Adelaide, SA, 5001. Envelopes are to be endorsed "Remembrance Day Contest" on the FRONT outside. Entries must be forwarded in time to reach the Contest Entry by 27th September 1985. Any entries received later than this date may be used as Check logs only.

12 DISQUALIFICATION. See general disqualification rules as printed in detail in the August 1984 issue of *Amateur Radio*.

Any station observed during the contest as constantly departing from the generally accepted codes of operating ethics may also be disqualified. **AWARDS** Certificates will be issued generally on the following basis:— To the top scorers for each call sign class in each Section of each Category. The right of the Federal Contest Manager is reserved to issue additional certificates where considered warranted and to NOT issue certificates where, in the opinion of the contest manager, the entry does not warrant same. Certificates will be issued to top P2 and ZL scorers under the same conditions.

DETERMINATION OF WINNING DIVISION

Scores by stations in VK0 are added to VK7 and VK8 to VK5. Scores by VK9 stations are added to the mainland call area which is geographically nearest. Scores claimed by P2 and ZL stations are not included in the scores of any VK call area.

The formula to be applied to determine the winning WIA Division is as follows:— Total Contacts per Division multiplied by Weighting Factor.

The Weighting Factor is calculated such that should each WIA Division perform equally as well in 1985 as in the past nine years (averaged) the result would be a seven way dead heat. Consequently, the most improved Division will win the trophy and also earn a revised and lower weighting factor for the following year.

RECEIVING SECTION RULES

1. This Section is open to all shortwave listeners in Australia, Papua New Guinea and New Zealand. No act of transmitting station may enter this section.

2. **CONTEST TIMES** and logging of stations on each band are as for transmitting.

3. **ALL LOGS** should be set out as per the example. It is not permissible to log a station calling "CQ". The detail shown in the example must be recorded.

4. **SCORING** will be as per Rule 5 for transmitting with other aspects of that same rule also applying.

5. **CJUB STATIONS** may enter this section. All operators must sign the declaration.

AWARDS FOR SWLs

Certificates will be awarded to the highest scorer in each call area. Further certificates may be issued at the discretion of the Federal Contest Manager.

DUPE SHEETS

When stations make a reasonable number of contacts it is most helpful that they use some form of check ng system to ensure that they do not have rva id duplicate contacts. A form of sheet which provides a convenient method of making such checks for each band was described in "Amateur Radio", December 1984, page 54. I would suggest that you should use such sheets. Whilst it is not mandatory that you do so, it would be of assistance to the contest manager if you forward a copy of same together with your log.

COMMENT ON RULE CHANGES

You will note that there are a number of changes again made to the rules of the Remembrance Day Contest this year. These may be summarised as follows:—

The splitting of the contest into two Categories HF and VHF.

All contacts to score ONE point only.

Repeat contacts on VHF each 3 hours.

Dupe sheets are NOT mandatory.

Operation of more than one call sign is legitimate. Certificates awarded at the contest manager's discretion.

Before you attempt to query these changes I would submit for your consideration some additional information.

There has for some time been some disagreement as to the point that city operators have an advantage over country operators where VHF operation is concerned. Making two Categories and separating such operators should help solve that problem. It is a fact of life that one can obtain a greater number of VHF contacts by either living within an area of high population density or up on a mountain with great line-of-sight paths. I might also add that in some respects country operators have some advantage with less QRW from local stations, lower general noise levels and often more space for antennas, etc.

Under the rules for this contest any operator may enter in both HF and VHF Categories, however it becomes obvious that he would have to submit two distinctly separate logs. The same would apply to the submission of logs for both Phone and CW operation. CW and Phone comprise totally separate sections of the contest, however any operator may utilise both modes if he so desires. It seems to be a matter of pride for CW operators to state that they can get through more easily and faster than phone operators when the going is rough. The more important point for this contest is that by providing additional points for one mode over another the whole idea of the special formulas devised to make the competition between WIA Divisions more equal is thrown off balance by such bias.

The change to 6 hours between repeat contacts on VHF last year was excessive and produced a flood of complaints. The choice of the figure of 3 hours is attempted as a compromise. It may be that further change might be made on the basis of more experience with a VHF only category.

As stated above copies of dupe sheets would be helpful, however until more operators properly understand how to use same I am loath to make them mandatory. Some of the examples provided with logs for the contest last year would certainly bear out my point here.

If an operator has more than one call sign legally issued I see no reason why he cannot use them in any manner he wishes as long as he is abiding by the contest rules and licensing regulations. It would not normally provide him with any extra advantage to operate both call signs consecutively and can even add to the fun of the contest. This approach also allows a club call sign to be aired and encourages any such additional operation in the contest.

The matter of issuing certificates can become a problem. Under the previous rules it may surprise you to know that in excess of 96 certificates would be issued against the annual Remembrance Day Contest results. In many cases these certificates were issued to operators who, whilst they did comply with the rules, made in fact very few contacts at all. In some cases, full-call operators who made hundreds of contacts less than Novice operators in the same call area, became eligible for a certificate just because they made a handful of contacts on phone and maybe one or two on CW and thus became the only entrant for their call area in the 'Open' Section. In another instance some limited-call holders made in the order of 10 contacts on 2 metre FM and then made just one or two RTTY contacts with their friend just down

the road. Such an entry qualified for a certificate as the ONLY limited-call holder in the State with an entry in the Open Section.

At the recent Federal Convention I recommended in my annual report that the Contest Manager should accept discretion in the matter of issuing certificates. The Federal Council saw the wisdom of this approach and agreed. The guidelines for the Remembrance Day Contest do however suggest that where possible certificates be issued to holders of each class of call sign. This suggestion would be followed at the same time as consideration under the more general terms of reference for the Federal Contest Manager. The increase of the minimum number of contacts for a valid log from the previous requirement of 10 to the currently required 25 contacts is an effort to assist in overcoming the problem. Let us face the fact that any reasonably competent operator should be able to make at least 25 contacts in not much more than an hours operation and in most cases even less than one hour.

Generally speaking I would wish to pursue a policy which would not provide contestants in any contests with some kind of an advantage due to the fact that they manipulated their entry to fall into some unusual kind of category which brought them the right for an award with very little expenditure of effort as against those other operators who try hard in contests and operate in a fair manner.

In any case, I do hope that you will enjoy the Remembrance Day Contest this year and that you will provide your support for this, our major event for the year, as well as doing the right thing and being in there trying to help your WIA Division to gain the coveted trophy. I will look forward to exchanging a serial number with you.

EXAMPLE FRONT SHEET

REMEMBRANCE DAY CONTEST 1985

Category: HF Section: (A) Transmitting Phone
Callign: VK1XXX Name: Joe Brown
Address: P.O. Box 123 Farm Orchard, ACT 2611
Total Score: 1498 points

Page Total	HF Section	1498 Points
	Sheets	Score
	1	40
	2	39
	3	40
	—	—
	—	—
	Pages 30	Total 1498

Declaration: I hereby certify that I have operated in accordance with the rules and spirit of the contest.
Signed: 1 Brown Date: 20-8-85

JOHN MOYLE MEMORIAL FIELD DAY CONTEST 1985 — RESULTS

This appears to have been a success this year particularly taking into account the changes made to the rules to try and provide added interest. Even with the fairly short notice quite a number of stations seemed to come up with sources of 'Natural' power. I think perhaps the one to real 'y' take the cake was the operator who set a magneto type generator together with a hand drill on a piece of board and turned the unit by hand to power his IC202 Transceiver. Amateurs seem constantly to show the ingenuity I operated in the 6 Hour Division of the contest and I asked many stations about their feelings on date changes to same. Almost without exception

EXAMPLE TX LOG											
Category: HF Section: (A) Transmitting Phone											
Date/Time (UTC)	Band (MHz)	Mode	Call	Nbr. Sent	Nbr. Recd	Pts.	Date/Time (UTC)	Band (MHz)	Mode	Nbr. Sent	Nbr. Recd
17-8-85							17-8-85				
0800	14	SSB	VK1QQ	001	002	1	0800	14	SSB	VK1QQ	001
0802			NL	002	001	1	0802			VK1XX	002
0805			SAWV	011	003	1	0805			SAWV	003
0807			ZL2JAG	004	003	1	0807			ZL2JAG	003
0809			VK1XX	005	007	1	0809			VK1XX	007
Page Total 40							Page Total 40				



Jill VK6YL, on Penguin Island during the John Moyle Memorial Field Day, used Wind Turbine Power.

all those asked indicated that they would favour such a change as was mooted. This matter was discussed at the recent Federal Convention and it was agreed that the contest could be run as late as toward the end of March. As I have been pointing out this would definitely improve the situation as far as bush fire dangers are concerned and also possibly improve matters for the operators in the north of the country by being further away from the middle of the great wet season.

The introduction of the incentive type multipliers for VHF operation seems to have been satisfactory. Rather than very little VHF operation, as in the past, there was quite a lot carried out on a fair number of bands. VK6KZ for example operated on the 6 MHz bands (7.8, 3.5, 7, 14, 21, 28 MHz) and 7 VHF/UHF bands. (52, 144, 432, 576, 1296, 2304 and 3456 MHz). This was certainly an excellent effort. It might be said that this contest became too VHF orientated however something different had to be tried. As a result of this year's contest it would seem to be a wise move to re-introduce a VHF ONLY Section. I can assure you that even this Contest Manager can learn by his mistakes. Experience is a good teacher.

Some comments from logs—

"I think your change of rules rather good as it spreads the scoring possibilities, although I will need to re-map my VHF/UHF aerials to be competitive." — VK3BAF

"Congratulations on the reworking the rules for the John Moyle. The multiplier rule of map reference for VHF could be changed to make it necessary to provide information only on stations worked over 50 kilometres as all contacts are obviously eligible for at least the multiplier of 2." — VK2YUPPEP (VA issued point) — SQJL

"I took from the next John Moyle Contest as it seems to be the only contest that I have noticed that is friendly and that stations are operated in a gentlemanly manner unlike the RD Contest where a lot of stations seem to reply to a call then proceed to take over the frequency from low powered stations." — VK2YUPPEP

"I really like the idea of the Section under the serial number. It certainly aided me whilst adding the scores. I question the RS number. It was quite obvious we were not getting dot-matrix signal and readability numbers. We have entered the John Moyle Field Day Contest since 1979 and have a lot of fun." — VK6YR (NS Coordinator for Southern Downs Ad Hoc HF/DX Contest Group)

"So again congratulations on an excellent presentation and development of the rules. May your efforts at reworking the other National contests be as successful. Also I liked the new co-sponsorship of 'Home Station Emergency Power'." — VK2KZS (see enclosed a portrait photo of his emergency powered station between the photo is not good enough for reproduction. SQJL)

"It was obvious from the small number of notices contacted by my station that there needs to be some thought put into the rules for notice participants. Maybe an HF ONLY section. We need to

encourage the novices to enter as many facets of 'AR' as possible and contesting is one. Especially the John Moyle, as it is meant to familiarise amateurs in 'field' operation look forward to next years event." — VK1PJ

"Thanks for another fine contest, unfortunately this year I recently arrived on Christmas Island and sweets prevented me from activating a portable station. Christmas Island has 5 amateurs, two being fairly active. We may try and activate the Club Station VK3SD for the RD Contest so keep an ear out for VK3SD." — VK6SZ (V6GZ) (I have asked the Club in next year's 'BAND' — SQJL)

"It was an enjoyable contest and I would like to thank the organisers once again." — VK3DL

"You obviously put a great deal of thought into the rules but some thoughts may be of value to you. I do not believe there is a place for VHF in the NFD. The Ross Hill Contest caters for the VHF devotees. The present system allows near city operation on VHF to crank up huge scores in a fashion which has no rational significance." — VK2ARZ (Max made quite a few rather pertinent comments again from those quoted here. SQJL)

"Next time I see the need for portable HF antenna rather than the mobile whip if one is to be competitive." — VK6KZ

"Every Tuesday morning at 10 am at the Moorabin and District Radio Club venue there is a meeting of the old retired members. About 40 to 50 turn up and of them there is about 10 who used to operate VK3APC during past field days. We have now left it to the young chaps to carry on while we take a easy hi. If you study the word Portable in the dictionary you will find the definition does not really suit our situation. When we had VK3APC in the field days we needed a fleet of cars to carry all the gear." — VK3JJ

"The 6 and 24 hour sections should be retained as it allows people who can't devote all the time to the contest to participate at times to suit them." — VK3AJM

"The recent rule changes made the contest more enjoyable to take part in. The monster vertical for 150m collapsed when one of the guys broke it. A heavy slap on the back for an innovative change in the Field Day rules! The introduction of solar power to the contest was a real challenge. The generating equipment finally used was only a small portion of that actually experimented with (lithium included turntable, exercise bike and chemical batteries using lemon, copper and zinc sheet) — VK3CH President Northern Eastern Radio Group. VK3CNE, it believe our HF will be providing a separate article for Amateur Radio on their Field Day operations." — SQJL

"This was my first contest in 6 years of operating. I thoroughly enjoyed it and hope to catch you again next year." — VK6KHC

"Sir, I wonder if you are the same Ian Hunt that used to be a member of the VK3SD SWL Group many years ago?" — VK3BD (Ivan)

"And I wrote the SWL column for 'AR' for some time too."

"Once again it was a good fun weekend. Late February was better than early February. Probably late March would be better still. VHF/UHF Multipliers. We feel the whole contest this year was dented to operators to use these bands and the multipliers (tho' low HF DX points) gave no incentive to novice operators to go portable." — Eastern and Mountain District Radio Club

"The distance multiplier for VHF is a good idea to get stations active but how does someone in a low activity area like NE Newman or some remote area score highly in VHF or UHF. My letter's name is John Moyle" — VK3CK

"A majority of our operation were novices, no stations were heard on 10m. This Division runs the station in Weston Park which is located on the shores of Lake Burley Griffin, being in the park amongst the public has its advantages as far as publicity for amateur radio." — VK3KAL VK1 Divisional President for VHF/UHF

"Next year we go wind power — the points are worth the effort. Band conditions couldn't be worse. It helps to get 50 km from the city. We will compete again next year." — VK6KZ

Included amongst correspondence about the Field Day Contest was a multi-page letter from David VK4NLV representing the Radio Amateurs' Group. He also supplied copious details regarding past suggestions concerning Field Day rules. All of this material will be considered and discussed where necessary with a view to further 'fine tuning' and improvement of the contest rules in the future.

One final comment to critics of the fact that not much advance notice was given regarding the natural power rule for the contest. Such an innovation had to be brought into the contest sooner or later so always the first introduction of new ideas may seem to be without enough advance notice. As early as the November 1984 issue, this column canvassed the possibility of inclusion of such a rule as well as pointing out that it was already Federal Policy to pursue such an approach, so it should not really have come as too great a surprise.

Congratulations to each of the Section winners in the contest. I will have your certificates on the way to you as soon as possible. I would like to thank all those who entered the contest and for your supporting and encouraging comments.

On a lighter note, it was interesting to see that a number of operators are certainly well aware which

state they live in. In the front summary sheet where it was necessary for them to show the 'Division' of the contest they were entered in (namely 6 or 24 hour) quite a few instead showed 'VK2' or 'Victoria Division' etc. (40). Perhaps this indicates a mark of really strong state loyalties.

A total of 71 logs, including 3 check logs were received for the Field Day Contest this year.

6 HOUR DIVISION			
Section 'A'			
Single Op Phone			
Call	Contacts	Score	
4ZML	58	2268	
3BAF	124	2066	
9QK	145	1611	
3ADW	63	858	
6KZ	40	850	
5AJM	32	389	
2OD	19	233	
Section 'B'			
Single Op CW			
5DL	25	566	
2BQS	33	539	
2JM	17	474	
Section 'C'			
Single-Op Open			
2EL	88	1410	
2ARZM	56	827	
3SP	51	775	
Section 'D'			
Multi-Op Phone			
3CHZ	114	3462	
4ANK	104	1850	
1PI	169	1635	
5ARC	88	1138	
6YG	44	712	
4WIG	36	516	
Section 'E'			
No entries			
Section 'F'			
Multi-Op Open			
3WIA	116	3402	
2BOR	75	1607	
4WYN	181	1296	
Section 'G'			
Home Emergency Power			
3AKJ	62	879	
Section 'H'			
Home Mains Power			
2DRV	39	323	
7NIM	24	213	
3J	12	132	
7AL	12	120	
Section 'I'			
SWL			
L30371	21	115	
24 HOUR DIVISION			
Section 'A'			
Single Op Phone			
5BJA	291	3386	
6KHC	87	3360	
4AG	55	1370	
4ADB	43	930	
4AHO	43	925	
4YAF	18	540	
1LF	18	392	
4KAC	15	360	
4ZDV	19	54	
Section 'B'			
No entries			
Section 'C'			
No entries			

Section 'D' Multi-op Phone

3CNE	630	23632
3ANR	517	12398
4W1Z	473	9256
6YL	163	4783
1W1	172	2601
4W1T	168	1667
1KBW	33	690
4W M	24	492

Section 'E' No entries

Section 'F' Multi-op Open

3ATM	1123	27238
3ER	1079	17753
2WG	522	16500
3APC	1072	15102
3BML	728	13683
1ACA	221	4142
5LZ	287	4079
6YS	275	3198
2FFG	285	2453
6TJ	98	2337
5AT	158	2145
5BPA	83	1972
4WM	70	847

Section 'G' Home Emergency Power

2YU/PEP	270	5782
4AOE	60	725

Section 'H' Home Mains Power

3ZI	56	549
3DNC	81	424
5AGX	35	375
3RN	50	331
3XF	25	170
9XZ	36	127
3RY	3	50

Section 'I' SWL

John Ramsay	64	568
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Check logs were received from VK4APZ, VK4BIL and VK5BG. All entrants in this contest must be congratulated for the general high standard of logs submitted. In most respects they were according to the rules and were tidy and well arranged and a most without exception. I trust that this standard can be maintained for future contests.

AUSTRALIAN CONTEST CHAMPION 1984 — VK5AGX

With the publication of the results of the VK/ZL Contest, we can now provide the results of the Contest Championship Competition for 1984. Congratulations are due to Victor Nobis VK5AGX. He has been a consistent entrant in all the Australian contests for the year and his persistence has paid off. A highly honourable mention must go to the runner-up VK5NOO. It can probably be easily seen that if one is to have any chance at gaining the trophy you must enter in all four of the contests concerned as well as take part in both the phone and CW sections. The results below list only the scores in the four contests who have entered at least two or more.

Observant readers may have noticed that the caption under the photograph depicting the previous Contest Championship winner VK3XQJ was presented with the trophy as published in the May

issue of Amateur Radio stated that he was the winner for 1984. This was not correct and the caption should have read 1983.

EUROPEAN DX-CONTEST

1. **Contest-periods:** 1985: 10/11 August
1985: 14/15 September
1985: 9/10 November
0000 UTC Saturday to 2400 UTC Sunday

2. **Bands:** 3.5 – 7 – 14 – 21 – 28 MHz.

3. **Classifications:** Single Operator – all band, Multi Operator – Single transmitter; Multi operator/Single-transmitter-stations are only allowed to change band one time within a period of 15 minutes. A quick band-change and return for working new multipliers is allowed.

4. **Rest period:** Only 36 hours of operation out of the 48 hours are permitted for single-operator-stations. The 12 hours of non operation may be taken in one, but no more than three periods at any time during the contest and have to be marked in the log.

5. **Exchange:** A contest QSO can only be established between a non-European and a European Station. Exchange the usual five or six digit serial number RST/RST report plus a progressive QSO number starting with 001. W/K-stations in addition give their state (e.g. 599011 MA).

6. **Points:** Each QSO counts 1 point. A station may be worked once per band. Each confirmed QTC – given or received – counts 1 point (see below).

7. **Multipliers:** The multiplier for non-European stations is determined by the number of European countries worked on each band. Europeans will use the last ARRL countries list. In addition each call area in the following countries will be considered as a multiplier: JA, PY, VE, VO, VK, ZL, ZS, UA90 (see special regulations for RTTY Fig. 13). Each W/K-state will be considered a multiplier, but not W/K call areas.

The multiplier on 3.5 MHz may be multiplied by four
The multiplier on 7 MHz may be multiplied by three
The multiplier on 14/21/28 MHz may be multiplied by two

8. **Scoring:** The final score is the total QSO points plus QTC points multiplied by the sum total multipliers from all bands.

9. **QTC-Traffic:** Additional point credit can be realised by making use of the QTC traffic feature. A QTC is a report of a confirmed QSO that has taken place earlier in the contest and later sent back to a European Station. It can only be sent from a non-European station to a European station. The general idea being that after a number of European stations have been worked, a list of these stations can be reported back during a QSO with another station. An additional 1 point credit can be claimed for each station reported (note special regulation for RTTY see 13).

- A QTC contains the time, call and QSO number of the station being reported ie: 1300DA 1A/134 This means that at 1300 GMT you worked DA 1AA and received number 134.
- A QSO can be reported only once and not back to the originating station.
- Only a maximum of 10 QTCs to a station is permitted. You may work the same station several times to complete this quota. Only the

original contact, however, has QSO point value.

- Keep a uniform list of QTCs sent. QTC 3/7 indicates that this is the 3rd series of QTCs sent and that 7 QSOs are reported.

Europeans may keep the list of the received QTCs on a separate sheet if they clearly indicate the station who sent the QTCs.

10. **Contest Awards:** Certificates to highest scorer in each classification in each country, reasonable score provided. Continental leaders will be honored. Certificates will also be given to stations with at least half the score of the continental leader.

11. **Disqualification:** Violation of the rules of the contest or unsportsmanlike conduct, or taking credit for excessive duplicate contacts will be deemed sufficient cause for disqualification. The decisions of the Contest-Committee are final.

12. **Logs:** It is suggested to use the log sheets of the DARC or equivalent. Send large size S.A.S.E. to get the wanted number of log-and summary-sheets (40 QSOs or QTCs per sheet). Use a separate sheet for each band. All entrants are required to submit cross-check (dupé) sheets for each band on which they worked more than 200 QSOs. For each duplicate contact, that is removed from a log by the checker, a penalty of three additional contacts will be crossed out.

13. **Special regulations for RTTY:** In the RTTY-Section of the EUROPEAN DX-CONTEST also contacts between all continents and also one's own continent are permitted. Multipliers will be counted according to the EUROPEAN- and ARRL-countries list. QSO as well as QTC-traffic with one's own country (if strict is not allowed) SWLs apply to the rules accordingly.

14. **Deadline:** CW 15th September Phone 15th October, RTTY, 15th December

European Country List: C31 – CT1 – CT2 – DL – EA – EA6 – EI – F – FC – G – GD – GI – GJ – GM – GM Shetland – GU – GW – HA – HB – HB0 – HV – I – IS – IT – JZ Bear – JW – JWS – JX – LA – LK – LZ – OE – OH – OH0 – OJ – OK – ON – OY – OZ – PA – SM – SP – SV – SV5 Rhodes – SV9 Crete – SV Athos – T77/M1 – TA European part – TF – UA346 – UA2 – UA Franz-Josefs-Land – UB – UC – LN/UKIN – UO – UP – UQ – UR – Y22-99/DM – YO – YU – ZA – ZB2 – ZAD – ZA – ZJ Geneva – 4U1 Vienna – 9H1.

COLOMBIAN INDEPENDENCE CONTEST 1985

CONTEST PERIOD: Saturday 13 July 0000 JTC to Sunday 14 July 2359 UTC

MODES: CW and phone

CATEGORIES: A Single operator, single band, CW only, phone only. B Single operator – multi-band, CW only, phone only. C Multioperator, single transmitter, multi-band, CW only, phone only. D Multioperator multitransmitter, multi-band, CW only, phone only. (Note: There is only one single-band category, ie Single band operators using 14 MHz compete only in this band).

BANDS: 1.8, 3.5, 7.0, 14.0, 21.0 and 28.0 MHz

CONTEST CALL: Phone CQ HK Contest CW CQ HK Test

EXCHANGE: Phone Signal report plus three numbers starting with 001 Example 59001 CW RST plus three numbers beginning with 001 Example 599001

CALLSIGN		CONTEST AND TROPHY POINTS						2PS		5FF		5BW		3ADW		3ALQ		4XA		4AX		29IT	
JMMFD	Novice	VK/Phone	ZL CW	RD	Total																		
5AGX	6	19	3	10	—	38																	
5NOO	9	20	5			34																	
5QX	4	—	8	7	10	29																	
2BQ5	9	10	8	—		27																	
1LF	6	10	8			24																	

SCORING: Non-HK stations

With HK stations 10 points

With non-HK stations outside own country 5 points

With stations of one's own country 1 point

MULTIPLIERS: The combination of different countries worked on each band plus different HK districts worked on each band**FINAL SCORE:** Total QSO points times multipliers per band**LOGS SHOULD INCLUDE THE FOLLOWING:**

Time in UTC, station worked, report sent, report received, multiplier QSO points

Separate sheets should be used for each band. Multipliers should be indicated only the first time they are worked on each band.

A summary sheet should be included with the submission, indicating point computation, category of participation, name and address of operator, list of operators in case of multi-operator stations, standard contest declaration. Submissions not including summary sheet will be counted as check logs.

PRIZES: Every station which shows a minimum of 50 QSOs, at least 10 of which are HK stations for phone entries, or five for CW entries, will receive a certificate of participation. Overall winners receive plaques or cups.**OTHER CONDITIONS OF ENTRY:** Each participant must communicate with at least 10 HK stations on phone, or five HK stations on CW in order to have the entry accepted by the contest committee. Each entrant must submit proof of a total of 50 QSOs, at least 10 of them with HKs if one phone or five HKs if on CW, in order to be eligible for any prizes. Only one contact per band with the same station is valid.

Cross-band or cross-mode contacts are not valid.

DISQUALIFICATION: Violation of amateur radio regulations in the country of the participant, or of the contest rules, lack of ethics, phantom QSOs, duplication in excess of 2% of the total number of contacts, may be sufficient to merit disqualifications. In any such case, the decision of the LCRA Executive Committee on contests will be final and not subject to appeal.**MAILING INSTRUCTIONS:** Logs should be mailed no later than 30 August 1985. Logs received after 30 Dec. 1985, will not be eligible for consideration, though they may be used as check-logs.**MAIL:** All contest logs or other correspondence to:C/O Direct on de Concursos y Diplomas
Apartado Aereo 584
Bogota-Colombia
Sur Amer.ca.**1985 SEANET WORLD-WIDE DX CONTEST****CW Contest:** 0000UTC Saturday 20 July to 2359UTC Sunday 21 July 1985**PHONE Contest:** 0000UTC Saturday 17 August to 2359UTC Sunday 18 August 1985.**BANDS:** 10 thru 160 metres**ENTRY CLASSIFICATION**

Single Band — Single Operator

Multi-Band — Single Operator

Multi-Band — Multi-Operators

POWER OUTPUT: As stipulated in the regulations governing the licence of the operator.**CONTEST CALL:** "CO SEA" for CW Contest, "CO SEATEST" for Phone Contest.**REPORTING RS/RST:** per plus serial numbers starting with 001 and increased by one for each successive contact. See also rule 4d.**LIST OF SEANET AREA PREFIXES:** A35, A51, AP, BV, BY, C21, DU, FK8, FR, FW8, HL, HS, H44 JA (etc), JD1, KA, KC6, KH2-3-4-5-6-7-8-9-0, KX6, P29 S2, S79, T2, T3'a, VK (all), VQ9, V85, V86, VU2, VU7, XU, XV5, XW8, XX9, X22, YB, YJ8, ZK, ZL (all), 386-7-8-9, 3D2, 457, 5W1, 8Q7, 9M2-6-8, 9N1, 9V1, and 123**SCORING RULES**

1 For stations OUTSIDE SEANET AREA



Certificate No.

**THE WIRELESS INSTITUTE OF AUSTRALIA****CW CONTEST**

This Annual Contest was inaugurated to celebrate the 75th Anniversary of THE WIRELESS INSTITUTE OF AUSTRALIA — the oldest Radio Society in the world — formed at a meeting at the Hotel Australia in Sydney on March 11th, 1910. It was felt that with the advent of modern equipment and methods that there was a need to further the ability of morse knowledge, practice and skill.

AWARDED TO**FOR OUTSTANDING PARTICIPATION**.....
DATE.....
PRESIDENT**a Contacts with stations WITHIN SEANET****AREA of the following "bonus" prefixes:**

DU, HS, YB, 9M2-6-8, 9V1 & V85

20 points on 160 metres

10 points on 40 and 80 metres

4 points on 10, 15, and 20 metres

b Contacts with other stations WITHIN**SEANET AREA NOT listed above in 1a.**

10 points on 160 metres

5 points on 40 and 80 metres

2 points on 10, 15, and 20 metres

c Contacts between stations OUTSIDE**SEANET AREA will not be counted.****d Multipliers will be 3 points for each SEANET****country worked.****2 For stations in the SEANET AREAS****a Contacts with stations OUTSIDE SEANET****AREAS:**

10 points on 160 metres

5 points on 40 and 80 metres

2 points on 10, 15, 20 metres

b Contacts between stations WITHIN SEANET**AREAS:**

6 points on 160 metres

3 points on 40 and 80 metres

1 point on 10, 15, 20 metres

c Contacts between stations in own country will not be counted.**d Multipliers —**

Contacts with countries WITHIN SEANET AREA count 2 points for each country worked.

Contacts with countries OUTSIDE SEANET AREA count 3 points for each country worked.

3 The final score will be the sum of the POINTS multiplied by the SUM of COUNTRY MULTIPLIERS**4 Restrictions****a Contacts on cross-modes or cross-bands or mixed CW/PHONE logs will be disqualified****b Operators are not allowed to transmit two or more signals at the same time.****c Only one contact per band with the same station will be counted.****d Contest numbers should begin with 001 on each different band.**

- All entries in violation of the contest rules, incorrect statements in the submitted reports, taking points from duplicate contacts, and practices against the brotherhood of amateur radio will be disqualified.
f The decision of the SEANET contest committees will be final.

ENTRIES, LOGS, AND SUMMARY SHEETS All entries must be in the form of logs and summary sheets (list each country worked, number of contacts with that country, per band, and full, clear listing of your mathematical calculations of scoring). **ALL TIME** must be in UTC. Entries must be received by the Contest Manager not later than 20 October 1985. Results will be announced at the SEANET Convention, with individual winners notified by mail in advance. If you require the results to be sent to you, please include a self-addressed envelope and two IRCs, together with

your entry. Please retain a copy of all material sent as these logs will not be returned.

CONTEST PRIZES AND AWARDS The Highest scoring entry, in each classification, three for CW and three for PHONE, will each receive a very unique trophy.

In addition, the highest single operator entry, either as single band or multi-band, one for CW and one PHONE, will receive a prize consisting of the following:

Free convention registration (includes two dinners);

Free convention accommodation at Cebu Plaza Hotel (three days, two nights).

If you win but are unable to attend the convention, your trophy and a substitute prize, a copy of the Call book, Foreign Edition, latest copy available, will be mailed to you.

MAILING ADDRESS FOR ENTRIES CEBU

Amateur Radio League, PO Box 304, Cebu City, Philippines 6401 Attn: Seanet Contest

CW 75 ANNIVERSARY CW CONTEST RESULTS

The contest was held on the weekend of the 75th Anniversary of the WIA, and it was unfortunate that it clashed with BERL. However NOT to be held on the actual anniversary would have lost the meaning for the contest.

From remarks sent with entries, it would seem that everyone enjoyed the contest and many hope it will continue as an annual event.

Logs were of a high standard with 95 percent being correctly scored. Thank you for participating and for your comments.

Wally Watkins VK2DEW
CW Contest Organizer

CALL	SCORE	160	80	40	20	15	2	C'TACTS
VK2PA*	16088	54	11400	2074	2560		247	
VK7SA	13970		1080	10488	1988	414	222	
V13AUQ	9943	105	1260	7626	798	154	93	
VK8-HA*	7616				7616		119	
VK3ARC	5825	75	1026	1200	2484	1040	193	
VK3-I	4446	6	1140	858	2412	30	146	
VK7RO	3521		324	3036	160	1	99	
VK3CM	3164		1134	1428	594	4	128	
VK3CZ	2924		2337	260	135	192	88	
VK2II	2902		1716	864	322		135	
V3KS*	2736			2736			57	
VK2PS	2664		90	32	2542		76	
VK4YG	2419		1848	220	351		93	
VK6ABL	1908		936	342	630		100	
V13XB*	1776		1776				37	
VK4AV*	1749		1539			210	72	
VK4RF	1732		24	392	1340		100	
VK4BSQ	1710		672	408	630		107	
VK4AIX	1512		414	70	228	800	81	
VK6RL	1509			594	915		115	
VK4NCF*	1485		1485				55	
VK3VF	1457		810	372	275		86	
VK7DQ	1430		420	800	210		81	
VK2SL	1423		967	420	16		81	
VK6AFW	1394		480	210	704		79	
VK2JW	1343		315	560	468		92	
VK3BCH	1330		810	396	112	12	80	

VK4XY	1227
VK4NUN	1092
VK7KR	1006
VK4AGL	961
VK6ED	850
VK3XF	730
VK3CCE	649
VK3ZG	619
VK3DL	581
VK3RJ*	525
VK2VEM	420
VK3ABR	294
VK2BRC	285
VK2AZR	234
VK7RY	168
VK4XW	130
V13DOV	100
VK4APZ	24
VK2DEW	17
ZL1AIZ*	570
JM1LRQ*	360
ZL1AWH	194
OH7YF	98
JH7XGN	70
BR4JO*	27
JA1AT	20
JO1QZI	20
JM1WZP*	15

861	204	162		76
1092				52
486	168	352		80
360	348	252		78
396	18	435	1	55
150	468	112	50	
441	204	4		40
576	18	25		32
420	80	45		43
36	420		525	25
				26
420				19
54	216	24		20
285				18
3	230	1		25
3	144	21		14
		128	2	8
		3	16	81
		12	8	4
				5
162	192	216		49
		360		36
18		176		25
		98		14
		60	10	15
27				3
		16	4	6
		20	5	5
			15	5

*denotes section winner

Of interest

VK7SA - op VK3AE

VK3ARC - op VK5ADY

VK3CCE - QRP - 1 watt



Enthusiasm creates Energy!



75th Nostalgia

SHORT WAYER

In this 75th Anniversary Year we have had historical stories from or about amateurs in the by-gone era. This article is about a world-wide known, Australian SWL. The article was contributed by Charlie Nelson VK3WC, with original material from The Australian Radio World, Vol 13, No 1, 15th June 1948. The Radio World issued a SW League Badge. Charlie still has his badge numbered RW98DX.

"No listener is better known in this world than BERS195, otherwise Eric Trebilcock of Wynyard, Tasmania. Eric prefers listening to transmitting, ample proof of which liking is the fact that he has his ham licence just prior to September 1939 and hasn't bothered to renew it. Maybe a surfeit of daily operating in Civil Air work is more than enough, but for relaxation BERS195 turns to 28mc/cw listening.

"For this work he has always preferred a TRF receiver, and the one made for him previously fell into Japanese hands when Eric found it necessary to leave Rabaul in a hurry. Now a new TRF rx is on the job, using a VK65 RF stage, 954 regent detector and 647G headphone audio stage. Butterfly condensers tune RF and detector stages with coverage of the 50 and 28mc/cw bands by miniature plug-in coils. Such a receiver is a joy to

handle and Eric says of it — relative to 28mc/s — 'It is the goods.' I scored in the recent BERU contest with ZL, VK4, VK5, VK6, VE6, VE7, ZS5, ZS6, ZS1, ZS2, ZE, M13, VQ4, G, AP and V4. Many of the Gs etc, were RST 599. Last Sunday (25/4/48) I heard G, I, ON, F, PA and VK2EO as well as many VK6 phones at S9 plus. There isn't a thing wrong with using a smoothly operating TRF for receiver work.

"If sufficient readers are interested, a description of the receiver in use at BERS195 may be forthcoming."

Eric still retains his BERS number today and also has the VK 1.30042 number and has been a stalwart of the WIA for many years having been a Life Member in recognition of his work. Together with his late wife Gene, Eric manned the VK3 QSL Inwards Bureau for many years and has been a regular supporter of his DX, for the current columnist, with his SWL reports.

Eric is shortly to embark on a new direction in his life which may leave him a little short of time for SWLing, but one may be sure that if there is a spare minute, Eric will be listening.



CLUB CORNER

DEVIL NEWS FROM THE NW BRANCH

The monthly meeting of the NW Branch, with fifteen in attendance, was held at the Penguin High School with Ross VK7WP, being in the chair due to Tony VK7AX, holidaying in Cairns. Just as he was receiving some good SSTV from VK3 on 7.130 MHz. All accepted the comprehensive Treasurer's Report that was given by Jack VK7WJ.

The application by John Vanderlei to become a member was accepted. Welcome John. Robert VK7NAE, responsible for Youth Affairs, hoped to report more at the next meeting. QSL cards are not moving very fast according to the report given by Greg on behalf of Max who was unable to attend.

REPEATER REPORT

No problems have been reported with two metres and it is with pleasure that it can be reported the NW will soon have a new ATV repeater on the air. The location will be at Kelseys Tiers, behind Devonport, where the tower is installed with 240V AC being available. The Visual and CW ID boards are completed and the antenna design is well on the way. Yet to be completed are a couple of boards and the purchase of the coaxial cable.

Sincere appreciation is tendered to and includes VK7s AX OL OM, RN, UD, WJ, WZ and Peter Westerhof for their invaluable assistance so far.

GONG AWARD

It appears the introduction of this award has kept the use of the repeater down under the three minute mark. The name has been changed and if you are heard to make a mistake or other misdemeanour, you are a contender for this award at the next meeting.

Thanks to Greg VK7ZBT for his assistance in gathering the news for me and 73 till next month.
MAX VIK7WJ

WESTLAKES AMATEUR RADIO CLUB

21st BIRTHDAY CONTEST

"PRIZEWINNERS"

1st: ticket no 0063 — Sharp portable colour television VHF/UHF — Mrs J Webster (XYL VK2BZD), Eakwood.

2nd: ticket no 1733 — Dick Smith UHF transceiver kit — T Soundy VK2ETS, Merimbula.

3rd: ticket no 1380 — Makita cordless drill and flashlight — J Saunders VK2DEJ, Ryde.

4th: ticket no 0956 — home weather station — Elinor VK2DPY, Eumore Vale.

5th: ticket no 0346 — handyman tools to \$100 value — B Laughlin, Mount Hutton.

6th: ticket no 1705 — bathroom decorator style taps, handles and fittings — P Elson, Rockhampton Qld.

Prizes were drawn at the 21st Anniversary Birthday Dinner held at the Lakeside Motel,

Warners Bay on 27 April 1985 under the supervision of Aid G Pasternik, Mayor of Lake Macquarie City.

The organising committee thanks the following for their generous donations.

Watson and Gane (NSW), Wes Hughes Trestler and Hardware, W J and VK2CM and Westlake Education and all who prepared, distributed, purchased and folded tickets to make the a worthwhile fund-raising venture. All proceeds go to Westlake Amateur Radio Club.

WAGGA WAGGA '85 — 26-27 OCTOBER

The annual South West Convention will be held in Wagga Wagga this year. This event, one of the largest outside the central coast area is already attracting exhibitor enquiries.

The National Fox Hunting championships may also be held in conjunction with this event. The expansive undulating landscape and extensive road network is sure to make this event a precedent hard to follow.

The Convention will also include fox hunts and hidden transmitter hunts for both novices and experts. Wagga Wagga is located just off the Hume Highway. It is on the main Sydney/Melbourne rail link and has airlines serving Melbourne, Canberra and Sydney.

Don't forget to include this important event on the 1985 Event Calendar.

... see you there
Contributed by Peter Caw VK2KZZ
Publicity Officer



LISTENING AROUND

Joe Baker VK2BJX
Box 0121, Mildura, Vic 3500

Well it is the Saturday after Anzac Day, and because of a variety of personal problems, I've missed a few dead airings. Nevertheless, here I am with a new typewriter, a typewriter which I have fabricated out of a piece of junk and a nice sunny day so I'm out in the yard under the cheerful beams of "Old Sol".

It's months since I wrote the last column, yet from all over the country I've received on air compliments about past columns which is very encouraging, particularly at times when I've been going through a bad patch.

ANZAC MARCH

As was in the Mildura march from the post office to Henderson Park (the Cenotaph) on Anzac Day I thought that before I write more about the Northern Territory, a few lines about that march might not be out of place.

I found a place among members of the Second AIF, as there was no special place for Sigs. There were about ten or eleven sections of the march led by the Mildura Pipe Band which kept us well in step. Our section was commanded by a uniformed Sergeant Major and to hear those orders barked out for the first time after so many years, made me feel almost homesick for army life.

There were great crowds along the route of the march, many of them young people who had not even been born when WW2 was on. Men from the Korean and Vietnam conflicts marched proudly, and there were many from the women's services.

The guest speaker at the Cenotaph was an Aboriginal officer who had seen much service.

Part experience of the marches has taught me that at the end of the march I would miss out on getting a seat in Henderson Park as the crowd arrives there before the marchers. This time, however, a young scoutmaster got me to a supply of bucket-tye seats, which I rested my weary bones. And who should I find right beside me looking as chipper as

a young coll, but "The Wizard of Oz" — VK3OZ, Bert Shire (ex VK5OZ of Tumby Bay). I don't know who was the more surprised to see the other. Bert is ex-RAAF, and this Anzac Day was his eighty first birthday.

I had brought a pocket camera with me, and needless to say I had it soon aimed at Bert.

BACK TO THE NT

Most serving personnel in the Northern Territory, by virtue of the fact that it was wartime, were not free to wander just anywhere. So, we missed out on many of the prime tourist spots that we hear of these days and were usually confined to restricted areas. However, my brother and I — he was an RAAF Security Guard — managed to keep tag of each other through the various field-telephone links (Don R. Telephones and Freddie Phones).

One time I heard that he was up near Darwin on guard duty and when I got there found him standing in the middle of a minefield guarding an RAAF bomber that had failed to make it to base and found itself nose down in the mallee with its tail high in the air. As I approached along the roadway, he screamed out at me to keep back as the whole area was mined. How the RAAF got him into that patch just to keep the mosquitoes away from that bomber, I shall never know, but I took the hint and our conversation was carried out in loud voices across the minefield.

I was in the Territory when Fenton Strip and Adelaide River was bombed and my brother Frank (who died in 1983 at Mildura), said that the Zeros came in so low near Adelaide River that he could hear the bomb drops open.

BOMB ATTACK!

What's it like to be chased by a bombing plane, when you're in the back of a military truck going up a long road? Well, it happened to me and a truckload of others who were hitching a ride to Darwin up a long road from the 67 mile post near Coomalie Strip. We were probably somewhere near Manton Dam

when the bomber was observed approaching from the south. The pilot had spotted us, and over and over the word he came was "we panicked and thumped as hard as we could on the cabin of the truck. He was zooming straight towards us, then when he got so near that we could see him in the cockpit and almost hear him laughing at us, he zoomed straight up and over us. He did three or four dive-bombing attacks at us in this way and when we saw that he was one "of ours" we all shook our fists at him and would have killed him if we had got him on the ground.

SPECIAL RADIOS

In the Territory there was a special radio unit, which it was said, had gear which was so sensitive that it could intercept enemy pilots doing a test-run of their radios before they took off from the airfield bases. I don't know exactly where the unit was located but we all knew that it existed and as well as listening to the enemy, the special job was to monitor our own army sigs, lest there should be some unauthorised operating. As far as I know, there never was — our own sigs having to stick to the correct message-form procedure, and on certain links it was customary, to keep up the same average number of messages per day, which of course were all in cypher. Not all of these were "Action" messages, some were dummies, just to make up the average number for if the enemies began to notice that traffic on such and such a link was a bit busier than usual, they would smell a rat. Stationers were also provided with means which any challenging station could identify and know which were ours and which were not.

There's much, much more that could say about the Territory. It was an adventure for us rookie soldiers who saw the north under wartime conditions, yet all of us, I am sure, would like to see the Territory again some day, and like the Diggers of Gallipoli would like to visit again the places where we served.



VK2 MINI BULLETIN

Tim Mills VK2ZTM
VK2 MINI BULLETIN EDITOR
PO Box 1066, Parramatta, NSW 2150

It's approaching mid winter so I hope that your shack is protected against the elements. These notes cover a few activities over the next few months for you to take part in.

SEMINAR PLANNING

It is a hand to hold the 1985 Seminar at Amateur Radio House, 109 Wigram Street, Parramatta on Saturday the 21st July. The first session will commence at 10 am. Presentations of various awards will be made during the day. The Divisional broadcasts will advise further details.

REMEMBRANCE DAY CONTEST

To be held as usual next month — see rules elsewhere this issue. Last year this Division won the RD for the first time since winning in the first year the event was held in 1948. 36 years has been too long to wait to see it back in VK2. However this is an annual event so each August all States compete to try and win it back. It is hard for the larger Divisions and it requires extra effort to achieve the scoring ratio. Now that the 'Trophy' is back in VK2 how about making sure it stays here for a while. Set aside some time during the RD weekend to take part and help the VK2 score.

Left. Steve VK2PS, the VK2 Federal Councillor accepting the RD trophy on behalf of the VK2 Division from Federal President David VK3ADW at the 1985 Federal Convention.

75TH DINNER

It is planned to hold the VK2 75th Anniversary Dinner on a weekend during September. The Federal Dinner will be held in Melbourne early November.

WICEN

Major coming exercises in the next few months, which will require a lot of operators, include the following: *Sun 'City to Surf' on Sunday 4th Aug. in Sydney. The car rally at Batemans Bay on the weekend 21/22 Sept. The Hawkesbury Outward Bound Canoe Classic on the weekend 26/27 Oct.* All amateurs are invited to assist with these events. Details and calls for operators will be made on the broadcasts nearer the time. As an experiment the weekly WICEN net times have been brought forward to 8 pm on Thursdays, 3.600 MHz and VK2RWS 7.150.

SEPTEMBER AR

It is to be another special VK2 issue. If you have anything to contribute please have it reach the Divisional office at Parramatta before 17th July. If you have a small technical article send it direct to AR, there is a ways a need by the Editor for these.

CONFERENCE OF CLUBS

The next meet now will be hosted by Westlakes ARC at Terral on 3rd Nov. Agenda items for discussion should be considered now and submitted through



Photograph by Ken McLachlan VK3AH.

your Club to the Divisional office to allow early circulation. Items which may need later national (Federal) consideration should also be submitted to this meeting so that if passed by the C of C there will be sufficient time for other States to consider it before the 1986 Federal Convention, which will be held in Melbourne on the 1986 ANZAC weekend.

MUSEUM STATION

The Museum station VK2BQK has been re-established in the first stage of the new Powerhouse Museum in Ultimo. VK2BQK had been first set up in the original Museum in Harris Street. When this section of the Museum was closed, work started to establish a station for the new building. VK2BQK has been designed so that, on completion of the final stages, it can be relocated in the main section.

The VK2BQK station was officially launched on the evening of 14th May last by Alan Jones from Radio 2UE. A future issue of AR will carry a feature on the station. VK2BQK is operational on weekend afternoons and one day during the week. The operators are members of the Museum Radio Club. To help ease the roster workload additional operators are required. If you would like to help out, please contact Pierce Healy VK2APQ on (02) 705 6125 or leave your name with the Divisional office or the reception counter at the Museum.

Other Museum stations I know of in Australia include the Science Museum in Swanston Street, Melbourne which is used by the VK3 Division for their broadcasts. There is also Wireless Hill at Applecross in Perth. Also some static displays are in other major

museums. There are several private displays which often concentrate on a particular subject or aspect of electronics. It would be nice to feature all the Museums and displays in a later issue of AR. If you have or know of a display which could be included in the feature please advise the VK2 Division or Federal offices.

HOME BREW CONTEST

It is again time to start thinking about this annual VK2 activity. Entry forms and details may be obtained from the Divisional office. Call in to the office at 109 Wigram Street, Parramatta 11 am to 2 pm weekdays and Wednesday nights 7 to 9 pm. You can ring during the above times on 02 689 2417. The presentation for the 1984 contest will be made at the July Seminar.

VK7SA OPERATION

There is to be another VK2 segment early July. Amateurs who would like to be able to use the signal in a personal capacity for a 24 hour period should register their interest with the Divisional office. Steve VK2PS is in charge of operations while the call is available to VK2 — 8 to 21st July.

CLUB AFFILIATION

At the May Council meeting the following Clubs were granted affiliation with the VK2 Division. The IARP Users Group and the Cnfly Amateur Radio Club. Both groups are located in Sydney. Any club or group seeking affiliation with the Division should apply to the office for application forms.

NEW BAND

On 22nd June 1985 the 24MHz or 12 metre band was released to US amateurs and the 10MHz or 30 metre band became permanent.

Full power of 1500 watts PEP output is allowable at 24.890-24.990MHz with the sub-band 24.890-24.930MHz limited to CW and RTTY only. In the sub-band 24.930-24.990MHz CW, phone, FAX and SSTV are permitted.

On the 10MHz band (10.1-10.15MHz) power is limited to 200 watts PEP on CW and RTTY, the only modes allowed.

From The ARRL Letter Vol 4, No 10.

NEW THREAT TO SIX??

A German atmospheric radar called SOUSY operates in the region of 50MHz. It is a vertical atmospheric radar or sounding system. Events in the atmosphere and up to 100km altitude are tracked.

A system has been installed for US space shuttle launches from Cape Canaveral. This system checks for severe clear air turbulence and other hazardous phenomena.

A beam peak pulse power of 200kW is used with an antenna array which has a gain of around 30dB. Multiple Yagis are used in phased array

Resolution to 150 metres is achieved at levels between 500 metres and 30 000 metres. The profile of conditions is dynamic providing a minute to minute read-out.

The SOUSY system was developed by the Max-Planck Institute for Aeronomy. The first trial system was tested in the Harz Mountains in West Germany.

The Cape Canaveral system is leased and operated by Radian Corp of Austin, Texas.

Let us hope that SOUSY is not heard on 8 metre DX. 70cm Silex on EME is bad enough.

Adapted by Gf Jones VK3ALF from an original report published in Electronics Week, 8th April 1985.

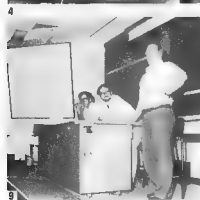


VK4 WIA NOTES

Bud Pounsett VK4QY Box 638, GPO, Brisbane, Qld. 4001

All photographs were taken at the Conference of Queensland Radio Clubs, 13 and 14th April 1985, at Griffith University, Brisbane.

1 Delegates from all parts of Queensland were listening with rapt attention 2 Mike VK4YOB, speaks on behalf of the South East Queensland Teletype Group. 3 The informal sessions are where a lot of problems are solved. 4 On display. Dept of Communications monitoring equipment including a \$100,000 Doppler DF. 5 Doug VK4ADC, representing DOC during his presentation shows a long print out of activity logged on Brisbane 2 metre repeater, VK4RBN. 6 Alan VK4YAF, reports on the radio amateurs group intruder watch programme. 7 Summit meeting of federal representatives. Guy VK4ZXZ (Federal Councillor), Len Keogh, MHR (Federal Member for Bowman) and David VK3ADW (VIA Federal President). 8 Geoff VK4AG, presenting the radio amateurs group report. 9 David VK3ADW, spoke to the Conference. Seated Barry VK4BK and David VK4NLV, Minutes Secretary and Conference Chairman respectively.





FORWARD BIAS

VK1 DIVISION

Ken Ray
PO Box 710, Woden ACT 2606

70cm REPEATER

The 70cm repeater is back on the air after repair. It is operating on a temporary site until spring, when we can get access to Mt Gin n to install the repeater in its final location. For those interested, the technical details are:

Callign VK1RGJ
Frequency 438.525 MHz output
431.525 MHz input
(DSF Explorer ch21)
8.5 watts
Output Power 25 element collinear
Antenna 2.5 minutes
Time Out

The transmitter is a VHF high band unit, with the 25 watt output strip feeding a varactor tripler, which then feeds through a cavity filter to the 4 cavity duplexer. The receiver is a high band receiver, with a LHF converter. This gives it three IFs — 170 MHz, 10.7 MHz and 455 kHz. Output spurs were undetectable on a spectrum analyser, which would put

them at least 80 dB down.

Once the winter snows clear, the repeater will be installed on Mt Gin n, with the channel 6950 2m repeater. For those interested, Mt Gin n is one of the highest mountains in the ACT, at 1762 metres high. That makes the VK1RGJ repeaters the highest in Australia, at least according to the 1984 Call Book. Mt Gin n is part of the Brindabella range, the rugged mountains which form the western boundary of the ACT, and close to the northern edge of the Kosciuszko National Park. For those wanting to know where to point their beams, the site co-ordinates are:
Latitude: 35.5311 deg S
Longitude: 148.7703 deg E
(See Natmap 1 100,000 sheet 8626)
AMG — Zone 55
Easting 660500
Northing 6066000

In summer, a pleasant day's outing can be had from Canberra, driving up into the beautiful alpine country

In winter, it is often cut off by snow for four or five months; and the snow-capped peaks can be seen from Canberra on a clear day.

ITU DAY — AXIITL

Friday, 17th of May was ITU day, and the VK Division set up a display station at Belconnen Mall, one of Canberra's major shopping centres. The station operated from 0200 to 1030 UTC, and 109 contacts were made to the following countries: CT, EA, V2, ZL, W, AL7, C21, JA, XE and of course VK.

Thanks to the following VKs who gave their equipment and time — KAL, PJ, NEB, CJ, ZZO, MA, NCO, KCM, ZZT, KRM, UE, OK, NDV, ZL, IC, HZ, and ZXA.

JULY MEETING

Don't forget the July meeting on Monday the 22nd in the Griffin Centre. We will be having our mid-winter sale and coffee night. Doors open at 7.45 see you there.



FIVE-EIGHTH WAVE

Well, barring any "hiccups" over the next two days, I think I shall be able to say that our display station at the GPO was a great success. At the time of writing I have just spent a day at the GPO display which coincided with the release of the pre-stamped envelope to mark the 75th Anniversary of the WIA.

We were very lucky to be able to use the VK75A call sign for this occasion, and thus ensured no shortage of contacts for the public to hear. The GPO staff were extremely helpful and this along with the free cups of coffee were really appreciated.

My thanks must go to the following gns — John Moffat of CS, and Dick Boxall for the loan of rigs. David Clegg, and David Hogben of the GPO for the "high-wire act" they did in rigging the aerials! Jack Wright

for the loan of VHF/UHF aerials, power supply and coax and all the time he has put into it, and also to Les VKSKLH, Bill VKSAWA, Cyril VKSKEM, Ray VKSRK, Colin VK5FX, Tom VKSTL and Roland VK5OU, for spending varying amounts of time there. And not forgetting the many amateurs who came along in the lunch hour, or dropped in "between jobs" to see how we were getting along.

Lastly, but by no means least a huge "thanks" to Peter Keen for two new panels on the display board, dedicated to the 75th Anniversary, and an improved lighting system, and also my grateful thanks to John and Louise Badcock for their work on the new PR "Flyers" (handouts) and for the media releases which resulted in a photographer from the News being

present. If I have inadvertently forgotten someone, I apologise in advance. It really is great to have so many willing volunteers.

(Don't stop now, we have just heard that the Morphettville News-Electronics Show will be from 18th-20th October this year!)

DIARY DATES

Tuesday 23rd July... A Special General Meeting has been called for this date, please refer to your "Journal" for details. We hope that this part will not take long and that there will also be a speaker, but details of this are not known at the time of going to press.



WA BULLETIN

Fred Parsonage VK6PF
HONORARY SECRETARY

VK6 DIVISION
Box 10, WEST PERTH, WA, 6005

At the 1985 AGM of the West Australian Division, the following were appointed to the Divisional Council:

VK6IW Dave Wallace	Membership Secretary
VK6LZ Cliff Bastin	Treasurer
VK6MY Cyril Ribb	Peel ARG and Comet sub-committee
VK6NE Neil Penfold	Federal Councillor
VK6OO Bruce Hedland-Thomas	President
VK6YL Jill Weaver	WA Repeater Group
VK6ZGA Allyn Maschett	VHF Group
VK6ZLZ Christine Bastin	Booksales Officer

(KYL of VK6LZ)
Broadcast Officer and Vice President
VK6ZMG Doug Gordon

There were nine nominations for the nine positions, therefore no ballot was necessary. In accordance with the Constitution which states that the Secretary may be appointed from outside of the Council Fred Parsonage VK6PF was appointed to the position.



FM RADIO DX

During March 1984, a low power FM broadcast test transmission was received in Italy. The transmission came from a low power test being carried out near Melbourne.

This transmission, on 106.5MHz, was being made by a local radio broadcasting group called Southern Community Broadcasters. The ERP achieved was only between 6 and 9 watts.

The report from Italy gave a SINPO report of 35333. This is a strong signal.

The transmission would have taken place close to the equinox, a good time for such propagation on other occasions.

Previously Channel 0 has been received overseas, also there have been a number of reports of FM radio station reception from Argentina.

This report must be pretty well up in the kilometres per watt stations. One can only speculate on the possibility of 50 and 144 MHz contacts over such paths.

Contributed by G8 Soreo VK3AU from original source material in RUC Monitor, March 1985.



WIA 75th
ANNIVERSARY
STICKERS

Suitable for use on QSL cards or envelopes.

Help publicise your Institute's Anniversary.

\$1 for 20 stickers — post paid.



OVER TO YOU!

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

AMATEUR COOK BOOK

The Wagga Amateur Radio Club is compiling an Australia Wide VK Cook Book.

Invitations are extended to amateurs and their families for their favourite recipes to be published in the Cook Book.

The book will be printed and for sale at the Annual Wagga Convention to be held on the 20th and 27th October 1985.

Recipes should be forwarded to the Wagga ARC, GTHR

Thanks and 73,
Dave Longmore VK2ZYE,
Box 1265,
South Wagga, NSW, 2650.

Mobile Operation

Regulation 618 of the Amateur Operator's Handbook states, inter alia, that "... the licensee ... may operate the station in a mobile capacity ..."

This seems to infer that operation in a moving vehicle is permitted.

It is a fact of life that operation from a moving vehicle is being carried out by a multitude of operators — amateurs, CBers, taxi drivers, fleet drivers and truckies. However, it is a fact that each such operation breaks the law as interpreted by the police in Victoria.

I believe that the WIA should consider the principles involved, since our hobby at present induces many of us to break the law. I am, of course, not concerned with the law being broken by taxi, truckies — that is their business, not ours.

May I suggest an approach to the authorities concerned with a view to have the relevant regulations modified. I believe that the main objection to operating in a moving vehicle rests in the necessity to drive a single-handed while holding a microphone with a receive/transmit switch. If the regulations were to be amended to specifically permit radio operation by the driver of a moving vehicle provided that both hands are used at all times to control the vehicle, it would open the way for legal operation under the following conditions:

Use of either a throat microphone or a headset microphone (lapel microphones are likely to pick up too much noise).

Use of a foot switch, a switch mounted on the steering wheel or, preferably, VOX operation for receive/transmit control.

Use of only one headset ear piece, to allow police or emergency vehicle sirens to be heard, or use of the transceiver speaker.

By using the most convenient combination of the above, operation on a moving vehicle would be no more dangerous than talking to a passenger or listening to the car radio. The use of handholds would, clearly be still illegal.

It would be interesting to find out whether action by the WIA on this matter is favoured by other amateurs.

Best 73,

George Cranby VK3GJ,
Box 22,
Woodend, Vic. 3442

TECHNICALLY — NO FRILLS CASSETTE LOG PROGRAMME

In the "Cassette Log Programme" article in March 1985 AR, the offer of a "highly advanced version for the unexpanded VIC-20", brought a large number of letters. The programme is "no frills" with the limited VIC memory in mind and like the previous programme, stores 250 call signs plus the page number in your witter log for quick reference.

With 8K expansion RAM-pack on board, the

number of calls per cassette may be increased to 500. Further increases are possible at the expense of loading time of the file and for practical use, 500 calls just about takes it out. To increase the number of calls, the following two lines in the programme must be altered to,

570 I=I+1 C\$(0)-"FF" 498 THEN 940
840 DIM C\$(500), P\$(500): RETURN

The system requires that you have many cassettes so that you split calls by country, prefix etc as described in the March 1985 article. As usual, if you want to avoid Repetitive Strain Injury from the typing, \$5 to the author will get you a tape and a summary of the instructions from the March article which don't bear repeating here.

73,
Neil Cornish VK2KCN,
56 Sherwin Avenue,
Castle Hill, NSW 2154

MAN IN MOTION

The Institute has received a request of assistance from the following:

The British Columbia PEP Amateur Radio Service would like to enlist WIA support and assistance in the provision of amateur radio communications for the Man in Motion World Tour, organised by the Canadian Paraplegic Association.

Rick Hansen, a world class wheelchair marathoner, will wheel 25,000 miles around the world in a historic, first ever World Tour to carry a symbolic torch of inspiration to 6 continents, 34 countries, and 60 cities with metropolitan populations totalling over 200 million people.

Rick Hansen is an articulate wheelchair athlete from Canada who has won 19 international marathons in such cities as Montreal, Toronto, Boston, Miami, Honolulu, Sydney, Australia, and Oita, Japan. Rick has won 9 gold medals in athletics at the 1982 Pan-Am Games and is a champion in several other sports. He has also competed in the XXIII Olympiad in Los Angeles in the 1500 metre wheelchair race.

The World Tour began in March 1985 in Vancouver, BC, Canada and will end 17 months later at the gates of the 40 country Vancouver World Exposition, EXPO 86, in August 1986.

The World Tour will roll through the United States and Mexico before going to Europe, North Africa and the Middle East in 1985. In 1986, Rick will wheel through Australasia, Japan and the Far East, departing from China for Central and South America and the home stretch across the breadth of Canada.

The major objectives of this historic undertaking are to provide an awareness of and potential for the disabled person, and to initiate a world wide fund for spinal cord research.

The official caravan will include one specially equipped van for recreation vehicle for Rick and his personal team and one van for an advance party who will be contacting media, making certain the route is still OK, etc.

The amateurs are being asked to provide operators who can ride in or accompany both of these vehicles to provide them with communications to each other, and transmit at least daily situation reports back to Man in Motion headquarters in Vancouver.

In British Columbia, amateur communications will be organised by the Provincial Emergency Programme Amateur Radio Service with a number of paraplegic amateurs at Pearson Hospital in Vancouver, BC operating their HF station as the local end of the communications chain. In the United States, it is being co-ordinated by the Courage Handi Hams, an organisation of handicapped radio amateurs. It is hoped that in other countries the national amateur radio organisation in each country can be persuaded

to assist the project.

I hope that the W.A.W.I. will consider arranging the amateur activities in your country for us.

Thank you very much for your assistance.
Yours sincerely,

Robert Smits VE7EAD
202-13640 67 Ave.
Surrey BC
Canada
V3W 6X5
604-590-1014

Rick will wheel from Sydney to Townsville during late December 85 to early January 86. Volunteer operators to assist this marathon are required. The Institute fully supports Rick's endeavours and hopes that members, clubs or groups will provide the assistance required.

Contact the VK2/VK4 Divisions for further details.

FURTHER TO QUESTIONNAIRE

I refer to the recent survey of AR readership. I wish to congratulate the Federal Executive for their initiative in conducting this survey and to urge the Divisions to make full use of the results.

This survey, when the results are fully analysed, will provide the Federal Executive and the Divisions with information on the distribution of interests of the members. This information has never been available before in this detail or accuracy. At Federal level, this information provides a data base for decisions on such things as AR content, band and mode planning, funds distribution and in negotiations with licensing authorities. It can be used at Divisional level as the basis for decisions on meeting subjects, funds allocation and activity programmes.

Hopefully, Federal and Divisional committees will make the fullest use of the information gained from this survey. The rate of return of completed questionnaires may reflect the value seen by members in the survey.

Finally, a vote of thanks must be passed to Earl Russell VK3BER, for his valuable assistance in deducting the returns to a usable form. Earl has put many hours into this task and this effort is much more than that normally expected of a volunteer official of the WIA. Well done Earl!

73
Ray Roche VK2JR
Box 81,
Campbell, ACT. 2601

CODE AN LCD?

Is there anyone who has information as to the coding used to activate the LCD display on small pocket calculators?

I have a number of these — not working — and the LCD display would be ideal for use with home brew projects. But the method of activating the display is NOT the normal stroke method used for 7 segment displays. It is a complicated four voltage level arrangement applied to all of the 28 connections regardless of the number of digits which are displayed. Each of the connections seems to go to several digit segments, not always the same corresponding segment. The basis of the coding is a 3 level sequence to each connection and uses all possible combinations of the four available voltage levels.

Anyone who can crack the code is welcome to a few of these displays.

Ray Hartkopf VK3AOH,
34 Toolangi Road,
Alphington, Vic. 3078

ANOTHER MOTOR VEHICLE INTERFERENCE PROBLEM

Just recently before the May issue of AR arrived at my home I was confronted with an unusual problem concerning RF interference to a modern vehicle. After "had cured" the problem, AR arrived and I read with interest the story by Rod VK3UG, page 17.

Firstly, let me restate my first problem. This concerned a four-wheel-drive vehicle owned by a friend. He brought the vehicle to me complaining that when he pushed the transmit button of his transmitter the engine stopped.

I found this a hard job to believe but on test it was so. The engine, a powerful V8 stopped dead when the button was pushed even with the engine "revving" hard. Upon investigation it was found that the trouble was being caused by a recently connected tachometer. The instrument was fitted on the dash panel and had a lead to the "hot" side of the ignition coil. This is where the trouble originated. RF was being picked up by this lead to the tachometer and fed back into the electronic ignition system. Removal of the "tach" wire cured the problem. But, the owner was keen to retain his tach, so some RF filtering was called for.

Coax a cable was tried with the tach wire being fed through the inner conductor and the outer being earthed. The problem was still there although considerably reduced. The engine would only "miss" but not stop. An RF choke wound on a ferrite ring was placed in the lead to the tach adjacent to the ignition coil. This was the answer — the problem was completely cured. Bypass capacitors were not used because this would interfere with the electronic ignition system and possibly cause other strange effects. It was just after this event that AR arrived with Rod's story. Not quite the same, but certainly involving the same approach. . . .

A few days after I took delivery of a new Australian-

made car, appropriately designated as a "VK" model. The old reliable two-metre gear was moved from the old vehicle and installed in the new "one". To my surprise, when turning a corner and transmitting at the same time, the flasher went crazy. It not only sped up as Rod described, but broke into continuous "buzzing" depending on the engine revs. In fact, my XY1 thought I was using the horn when I was turning the corner and thought I was really going crazy!!! To cure this effect I re-read Rod's article with greater interest.

The flasher unit was located, fitted under the dash to the right of the steering column. It proved quite easy to remove being a "plug in" unit with three pins. The unit can be opened revealing a chip and a few components. I decided to install bypass capacitors outside the unit. These were selected direct to the pins as close to the unit as possible. I used 0.22 mF capacitors as these were available from the "junk" box. These proved to be quite effective and I am happy to relate that I can now turn corners and transmit at the same time without a loud "buzz" coming from under the dash!!!

With more and more electronics being introduced into the automotive scene, one wonders what other strange effects will appear.

Des Greenham VK3CO,
16 Chydesdale Court, Mooroolbarna, Vic. 3659

Note: Care must be taken when installing RF equipment in modern vehicles as RF has nasty effects on the electronic systems which feature in these vehicles.

WHERE WILL WE BE?

I wonder where amateur radio will be in ten or twenty years time. It is noticeable that we are an ageing fraternity with too few of the younger generation joining our ranks. In a recently published

American amateur magazine it was stated that the average age of licence holders there was over fifty. I would like to estimate that Australia would be similar. What can we do? I would like to put forward the view that we are, ourselves, killing the hobby by our own apathy.

Recently I had occasion to call for volunteers, firstly for new blood to come on to Council in VKs, as all members of the Council. I had served for a number of years and with the exception of our two VL members, were near or into middle age. There was one nomination from outside the set Council. That of Cyril VK6MY who was a regular visitor already in spite of frequent calls on the news-broadcast and at meetings, no one was prepared to serve. So we have the same members again, plus Cyril.

The second time was for volunteers to come forward to put their names down for work at the November Radio Rally. Many comments had been made previously as to the popularity of the two previous Rallies and how much annual ones would be enjoyed. Total number of volunteers apart from the participating groups? Seven. As a consequence, there will be no Radio Rally in 1985.

Lastly, I had been approached by a mother of a fourteen year old blind boy for help in preparing the boy for the May novice exam. The boy had studied in the UK for the full licence but had failed the exam. I suggested that the novice exam would be well within his capabilities, as his theory was based on the full UK licence and he had no problems with Morse. Consequently appeals were made over several news broadcasts and at the General Meeting for someone in the area to put in one or two hours a week going over regulations and general assisting. Result? NOT A SINGLE RESPONSE.

Fred Parsonage
20 Ranger Trail, Edgewater, WA 6027
AH

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Silent Keys

It is with deep regret we record the passing of—

MR ROY BAXTER	VK4FJ
20:04:85	
MR PETER M COHN	VK1KPC
MR GEORGE D BAIN	VK5ML
COOMBE	
05:04:85	
MR J M GIBSON	VK6GQ
19:04:85	
MR MICHAEL FULLER	VK7MJ
JENNER	
18:04:85	
MH FRED MAZURE	VK6MZ
31:03:85	
MRS VALERIE NORTON	VK4FKL
19:03:85	
MR A G OSWALD	VK2AEF
03:04:85	
MR LIONEL TAMSETT	VK2CS
SWAIN	
26:05:85	
MRS VERLE WESTON	VK2MR

Obituaries

ROY BAXTER VK4FJ

Yet another old timer has left us, with the passing of Roy Baxter, age 70 years, on the 20th April. Roy held his call, VK4FJ, for 50 years, and, in the past, was one of our top DX men. He was one of the brave souls who first activated Melish Reef in July 1972, and was a long time member of the First Class CW Operators Club, AMIRE, Amateur Advisory Committee and spent some 48 years in the Salvation Army Temple Band.

Roy also served every day of World War 2 in the Royal Australian Navy, with most of that time at sea, failing health over the last few years prevented him from pursuing his hobby to the full extent. Roy will be sadly missed by all his mates world-wide.

Fred Lubach VK4BR
AR

MICHAEL (MIKE) F JENNER VK7MJ

Mike was born in England in 1907 and came out to Tasmania in 1912. His early life was spent on Tasman's Peninsula, where, with his father and elder brother, he experimented with the wonderful world of radio.

With a super-regen receiver using a 'Weaco' valve, occasionally they would communicate with VHF Hobart Radio, sending Morse with a damp finger dabbed on the grid.

The seeds of an interest in radio communications were therefore sown at an early age, but did not bear fruit until much later in life.

Mike trained as a motor mechanic in Hobart, and for a time was employed in the trucking garage of Anthony Hordens' in Sydney.

In 1941, he and his wife, Grace, moved back to New Norfolk, in the Derwent Valley, where he lived for the remainder of his life.

During the years his interests included fishing and photography, he was involved in scouting, and was Deputy Fire Chief of the local Fire Brigade.

His interest in radio was re-kindled in the fifties when his eldest son started playing with radios, and the Morse training was put to good use.

Mike was convinced that he was too old to

pass an exam but with a little help from his friends, qualified for his amateur licence in 1973. Forced to retire early due to ill health, amateur radio, and later, a computer, made a wonderful and fulfilling hobby for him, Morse being his first love, followed closely by RTTY.

He was a 'man' in the true sense of the word — thoughtful, loving, caring, and a real gentleman.

His family was with him at the end and his caring, understanding and acceptance of the inevitable, helped make his passing, on 16/4/85 at the age of 77, so much easier for his loved ones.

He was my friend, and my father.

Mike Jenner (Jnr) VK7FB

FRED MAZURE — VK6MZ

It is sad to report the passing of Fred Mazure VK6MZ, who died suddenly on 31st March 1985. He was in his late seventies.

Fred rose to the rank of Warrant Officer in the RAAF, and after the war spent all his working life farming in the Busselton district. He never married, and after his retirement he moved into town, where he lived alone until his death. It is to people like Fred that amateur radio is of such inestimable value. In earlier days he was a keen CW operator, and in recent years kept regular daily sheds with friends on 80 metres. Despite his age, Fred kept well abreast of the technical scene. His shack was well equipped for HF and VHF, and he subscribed to several radio magazines, which he always read thoroughly.

Like most of us, Fred may not have made any great mark on the world scene, but he was a good friend and neighbour, and this kindly and gentle man has a place in the hearts of those who knew him.

Ted Davies, VK6ED
AR

LIONEL TAMSETT SWAIN VK2CS

The death on Friday 26 April of Lionel Swain VK2CS closed a chapter of amateur radio history in the Newcastle area.

Born in 1902 in Hamilton, a Newcastle suburb, Lionel took an early interest in the newly emerging 'wireless' science and by 1922 he was responsible for the founding of the Radio Society of Newcastle of which he was the first president. The call sign 2SO was allocated to this organisation.

It was two years later that Lionel gained his own call sign 2CS and, as was common in those times, he conducted on air tests with a small group of enthusiasts but his music transmissions on the medium wave band reached a far wider audience in the local area.

In 1929, as with all other call signs in Australia, the prefix 'VK' was added and Lionel became VK2CS, the call by which he was known until the time of his death.

He was a civil engineer by profession and on retirement held the post of Distribution and Maintenance Engineer, Water Supply, Hunter District Water Board. During World War II he served as a Lt Commander RANR in the Milne Bay area and later was seconded to the Department of Munitions where he worked on radar research in Sydney.

Lionel was a serious experimenter and meticulous with his construction work. Any of his 'projects' could have won a constructor's prize. He was an expert on aerials and for this reason alone was in demand as a lecturer.

He had a keen perception of the part radio was playing in the technological developments of Australia and he was often quoted on technical matters in the press. He was a keen WIA supporter from the earliest days and held the post of President WIA Hunter Branch for some years. In 1962 Life Membership of the Institute was bestowed upon him.



The large attendance, including many old timer radio amateurs, at his funeral was an indication of the high esteem in which he was held in the community.

Lionel is survived by his wife Enid and family including several grandchildren and it is to these that our sympathy is directed in the loss of their loved one, a true radio amateur and a gentleman.

K Howard VK2AXX
AR

STOLEN EQUIPMENT REGISTER



In accordance with 1984 convention mot on 84.17-01, the Federal Office has established a stolen equipment register. Members wishing to take advantage of this register, either to publicise the loss or to check equipment offered to them, may write or telephone the Federal Office for queries.

Update to the list published previously.

MODEL	SER NUMBER	FROM
ICOM IC-25A	03831	VK2DPM
ICOM IC-45A	01876	VK2DPM
ICOM IC-211	6804309	VK3BRV
KYOUTO FM-144/10	5027	VK2KJR
DS EXPLORER 70cm TRANSCEIVER HAS EXTENSIVE INTERNAL MODS.		
ICOM IC-215	05156	VK2AMX
YAESU FT-209RH	48050838	VK3CE
		(BLW VVn, CASE)
ICOM IC-2A	04484	VK1MX
YAESU FT-207R	10132725	VK2EMC
KENWOOD TS-120V	0081224600	VK2VWn
ICOM IC-22	12266	VK3BLC
KENWOOD TR-2400	0061926	VK2PJ
		(Call sign engraved on case)
YAESU FT-708R	1H01948	VK2PJ
		(Call sign engraved on case)

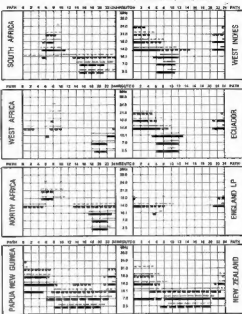
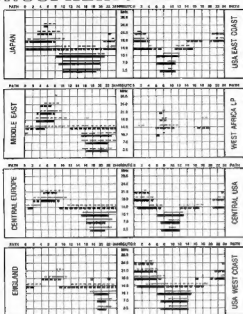
The first success of this register has been notified to the Federal Office. An Icom 2A has been discovered by an alert member in a batch of equipment offered to a retailer. The equipment is now back with its owner.

If you are offered second hand equipment please check with the stolen equipment register before purchase.

AR

IONOSPHERIC PREDICTIONS

Len Poynter VK3BYE
14 Esther Court, Fawkner, Vic. 3060



LEGEND

From Western Australia (Perth)

From East Australia
Canberra



Series: data 50% of the month or not every
day (continuous least)



Less than 50% of the month broken
least
Minimal data: Dependent on angle of
radiation
along broken least



Paths: unless otherwise indicated by
LP = long path all paths are short path.
Predictions represent country of the
Department of Science and Technology
Ionospheric Prediction Service, Sydney.
All times in UTC.

75th Nostalgia



EXAMINATION PAPER PRE-WWII

Commonwealth of Australia
PMG Department
Amateur Operators' Certificate of Proficiency
Time allowed 2 hours

THEORY

1. Discuss the relative merits and demerits of Heising and Suppressor grid modulation.
2. Draw a schematic diagram of a 3 stage crystal controlled transmitter suitable for amateur operation.
3. Draw a diagram of a key click suppressor. Also state what method you would adopt to prevent high frequency surges getting back to the mains.
4. Draw a diagram of a B class modulator and briefly discuss its function.
5. Assuming that a screen and plate of an audio frequency amplifier takes 5 and 15 mA respectively, what size bias resistor would be required to give 30 volts negative bias on cathode of indirectly heated valves. State how bias takes place.
6. Describe 3 kinds of microphones used by amateurs and their functionings.
7. Describe, and draw a circuit of a modern frequency checking unit for use in amateur stations.
8. Calculate the capacity of 1, 2 and 4 mF in parallel connected, in series with 3 and 3 mF which are also in parallel.

REGULATIONS

1. Give details of the distress call for telegraphy and telephony.
2. How many times may the CQ call be used? Give an illustration of the use of that call.
3. Which is signalled first in a message, the time or date? What time is indicated by the figures 04207

Submitted by Fred Lubach VK4RF
AM

NOTICE



All copy for inclusion in
September 1985 Amateur Radio
must arrive at Box 300, Caulfield
South, 3162 no later than midday
22nd July.

HAMADS

PLEASE NOTE: If you are advertising items FOR SALE and WANTED please write each on separate sheets, including ALL details, eg Name, Address, on both. Please write copy for your Hamads as clearly as possible, preferably typed.

- Please insert STD code with phone numbers when you advertise.
- Eight lines free to all WIA members: \$9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters double spaced to PO Box 300, Caulfield South 3162.
- Repeats may be charged at full rates.
- QTHR means address is correct as set out in the WIA current Call Book.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

Conditions for commercial advertising are as follows:
The rate is \$22.50 for four lines, plus \$2 per line (or part thereof) minimum charge \$22.50 pre-payable. Copy is required by the deadline as stated below indexes on page 1.

TRADE

AMIDON FERRONMAGNETIC CORES: Large range for all receiver and transmitter applications. For data and price list send 105 x 220 mm SASE to: RJ & US IMPORTS, Box 157, Mortdale, NSW 2223. (no enquiries at office . . . 11 Macken Street, Oakley). Agencies at: Geoff Wood Electronics, Rozelle, NSW. Truscott Electronics, Croydon, VIC. Willis Trading Co., Perth, WA.

70 cm power/VSWR meters (see p. 23, April 1984) 50 W to \$112.80. 23 cm long loop yagis from \$64.80. Waveguide modems, tubing & flanges. Gun & mixer diodes at good prices. 0.141" mini-rigid coax @ \$2.50/metre. 1/16" DS PTFE board @ \$4/csq. cm. 17 of LHFF Porcelain variables @ 10 for \$3.50. Send SAE for lists to Microwave Developments, & Netley Road, Mount Barker, SA 5251.

WANTED - NSW

MAGAZINES - Australian Radio World, Radio & Electronics, Radio Monthly, etc. Also lampshade radio books, Mingsys if frequency index & official service manual No 9. Brian VK2FZD, QTHR. Tel. (049) 77 2178.

SSB CRYSTAL FILTER with USB & LSB xtal's, 5 or 9 MHz. Ray VK2BIR, QTHR. Tel. (043) 92 3236.

WANTED - VIC

ART - not necessarily working. Details to Fred VK3DRX, QTHR. Tel. (03) 787 2886.

FT-107 invert to match series 107 Yaesu. Price to Mail VK3SKA. Tel. (03) 726 8752 A4.

MONITORSCOPE - VO-100 or VO-101. Also Hy-Gain 2 of triband quad. VK3VJ, QTHR. Tel. (03) 703 4192.

PROP PITCH ROTATOR. Working or for spares (especially low speed spider bearings). Command ex BC-94C (H4A-VK3DSC). Model 9-150000s. To complete collection. Any cond. Don VK3DQD, QTHR. Tel. (03) 848 3359.

ROTATOR - Ham II or Ham II with controller or suitable heavy duty type for use with TH6DXK. Gordon VK3DUB, QTHR. Tel. (050) 83 3340.

WANTED - QLD

RCA TX TUBE MANUAL. Army PRC-10, PRC-9 radio sets, aerials RS-292, AF-539, power supply AM-59BL, VK4ER, QTHR. Tel. (07) 38 1803 A4.

WANTED - WA

CRYSTALS - for repeater channel 7350 (ch15). Miniature HDK type paid. 2 each required if possible. Any reasonable price paid. Ted VK3DQZ, QTHR. Tel. (09) 82 1172.

DIGI-DISPLAY - DC-6 for Newwood TS-6206. Charlie VK9MP, QTHR. Tel. (09) 271 4965 - shift worker, phone anytime.

FOR SALE - ACT

DECEASED ESTATE - VK1FS. Versa FT-757 \$750, Yaesu FT-107 \$300, Iyohoku 25W, 2m FM \$225. Clipped GPO type key \$30. UP-50 low pass filter \$40. Newwood SW-200 meter + SW-1 coupler \$80. Scaler SC-222N 5 band trap w/ SW5. TH6DXK tri-band beam \$2500 - VK1KJ, QTHR. Tel. (062) 51 1818 A4 or (062) 64 3459 B4.

KENWOOD TS-620S, VF-230, AF-230, opt & avc manuals, new \$1100. Versa FT-200R, cond. manual, sale new \$375. PL-200 all mode linear, new \$150. YP-150 dummy load/water meter, 2-250MHz \$80. Oker SWR mt, \$50. Tlxan 121 green monitor, 2-250MHz. ES-1000T ES-1000T day/night typewriter/pulser \$800. Extra RS-232 interface for Olympus \$175. Henk VK2LYR, Tel. 80 5469 B4 or 84 9580 A4.

UNIMETRICS STINGRAY II CB converted to 24 channels on 10m USB & AM. Ex cond. \$140.00. Frank VK1ZL, QTHR. Tel. (062) 81 3956.

FOR SALE - NSW

FT-707 with mic & Irbok in ex cond. \$475.00. Ray VK2TV, Tel. (043) 25 8549 B4 or (043) 92 2244 A4.

ICOM IC-211 2m all mode AC txv, \$445. VK2CMA, Tel. (060) 25 1843.

ICOM IC-701, PS-701, ICRM-3 controllers. All ex cond. \$690. Macrotronics RTTY interface, software (cass & disk) for Apple, M2K-17 Modem. All cost over \$500. Sel \$190. Roger VK2KQD, QTHR. Tel. (02) 546 1927.

KENWOOD TS-120S with mic & 50Hz CW filter fitted + AF-120 ATU. Both ex cond. Whistler op manual \$25. Icom 260A all mode 2m 70cs c/w mic, manual, leads \$550. Helical modems, whips. ASE, ADI stubs for resistance 50 ohms. VVekel made, 40, 20 & 15/10m. Ex cond. All \$50 each except 80m \$35. VK2JH1, Tel. (043) 24 7630.

KENWOOD TS-520 AC fitted with 500Hz CW filter, a Kenwood remote VF-520. Both one owner & in good work order. Complete with mic & connecting cables with Irbok's for both units & orig packaging. VK2BIR, QTHR. Tel. (043) 92 3758.

KENWOOD TS-820S txv - used 3 times, still in orig pack. Kenwood antenna tuner for all bands, brand new. Yaesu lin PL-2000 output to 2000W CW or 1200W video. Has 2 new output modes fitted. Battery charger for 6 & 12V, new \$10. Yaesu opt \$10. Kenwood Mikro Three 2 mod'ing coils, new. Yaesu Super Crystal, in ex cond. Vertical ant 10-40m. New orig box, never used. Number of Absorption Wave meters Q14x5. \$5. Scope soldering iron \$10. New British soldering iron 10m. Multi-range multi-meter. Needs small repair \$5. Quantity of sundries too numerous to list. Tel. 98 5097 SA or 5m to arrange convenient time to call. Ben Hay, Flat 12/1 Redical Avenue, Wahroonga, NSW.

KENWOOD TS-820S - 1 owner, recently serviced by Kenwood. Icomax cond complete with whip manual & MC-60 mic \$450. Icom IC-700 control ex, as new. \$420. Ben VK2KX, QTHR. Tel. (02) 707 4303.

TOWER SECTIONS - large quantity, ex-Government storage, gals. 6' high. Both together \$10 per section + freight. The 560 m 30m. Model 9-150000. Ex cond. Vertical ant 10-40m. \$150.00. A Vahla L201R, QTHR. Tel. (048) 61 2092.

TV CAMERA. B&W Philips LDH-215, transistored, video & RF outputs. Zoom lens, 12V & 24V, 4.5" pic tube viewfinder. 5.5kg. Hbook \$100. VK2AZT, Tel. (069) 42 1392.

YAESU FC-700 ANT TUNER. As new \$160. Yaesu mobile 2m sub (RSB-24) \$10.

RSL-74 40m resonator \$22. RSL 3.5 80m resonator \$22. All perfect. Laurie, Tel. (062) 34 2679.

YAESU FT-102 (2xh1468) with 4m HB-14 mic, WAUC bands. As new. \$900.00. 2m VK2AZZ, QTHR. Tel. (065) 54 8269.

FOR SALE - VIC

CLEAN OUT - AFFR 7th sig 6m 20-D STV. TV align gen & osc Heathkit \$40. 11, 6m beam (BWH fittings) \$50. 2L 16 of special 2m beam. Designed & made by VK3JAP \$85. ATU model 444-25 \$50. Wafer switches rotary. Electro caps assorted. Assorted parts. Values, 80% ex. Mail VK3SKA, QTHR. Tel. (03) 726 8752 A1E.

DECEASED EQUIPMENT: Yaesu FRC-7 control rx in good work cond. Copy of Radio Amateurs H'book, World Radio TX H'book, ARRL Antenna Book & assorted pieces of equip. Price \$250.00. Tel. (03) 727 4926.

FT-102 with narrow SSB & CW filters. FV-102 DFTO, FC-102 tuner, SP-102 sply, desk & rot. mic \$35. 6mths old \$1500. Tokyo H-power linear pair 455A, 1000W. WARC bands \$750. Kenwood TS-407, 7.1, 28, 52MHz + gen cov r. 3 mths old. \$675. Delica DM-10 to 500MHz \$150. Delica ant impley antenna A21 \$450. VK3KST, Tel. (065) 72 3333.

KENWOOD TR-2400 H-field 2m txv + ST-1 pulse charger with ext & serial connections for base station operation. MC-305 500 ohm mic to suit the kit. \$250. Frank VK3DQD, QTHR. Tel. (03) 529 1686.

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YAESU COMAR RX. All bands incl 27MHz FTG7. 5-29.9MHz. Perfect cond \$250.00. N J Hawthornsworth, Tel. (03) 82 4853.

YAESU FT-480R. all mode, 2m exc. Exscr cond. \$400. Tony VK3KXK, Tel. (03) 725 8071.

FOR SALE - QLD

ASSORTED VALVES FOR ONLY 50 CENTS EACH. 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